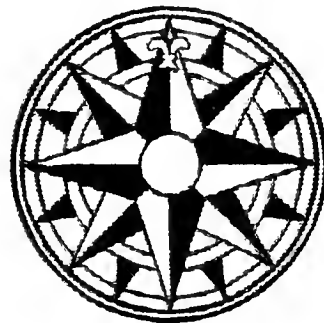


**DODGE'S
GEOGRAPHY
OF
PENNSYLVANIA**

~
ALBERT



Rand McNally & Co.

CLASS 917.4¹ BOOK

THE LIBRARY

OF THE

BLOOMSBURG
STATE NORMAL SCHOOL

BLOOMSBURG, PA.

ACCESSION No 57,

THE GEOGRAPHY OF PENNSYLVANIA

By CHARLES H. ALBERT, *Professor of Geography, State Normal School, Bloomsburg, Pennsylvania.*

Copyright, 1905, by Rand, McNally & Co. Revised, 1911

I. PENNSYLVANIA AS A WHOLE

Location. The state of Pennsylvania, one of the oldest and richest of all the eastern states, owes its present position in commerce and manufacturing largely to its geographic position. Extending as it does from the estuary of the Delaware on the southeastern to the Great Lakes on the northwestern side, and embracing, also, direct outlet by water through the Mississippi Valley, the state may justly claim advantages for internal and foreign commerce second to none among the states of the Middle Atlantic coast group.

The unparalleled richness of its mines, the abundant wealth of its forests, the exceeding productiveness of its fertile valleys, and the unrivaled scenery of its splendid mountains and broad plateaus all combine to place Pennsylvania among the first states of the Union.

Size. The most southern boundary of the "Keystone State" lies in 39 degrees 43 minutes north latitude. This boundary is the famous "Mason and Dixon Line," which long separated the free from the slave states. Its northern boundary, 156.9 miles farther north, is on the parallel of 42 degrees 15 minutes north latitude, a little farther north than the most southern part of Ontario. The state's most eastern boundary lies in the Delaware River at about 74 degrees 43 minutes 36 seconds west longitude, while its western boundary is found 302.35 miles west of this point, or in 80 degrees 31 minutes 36 seconds west longitude. Only two slight breaks interfere with the regularity of its boundaries. One of these grew out of conflicting land claims among early settlers, and the other out of a desire to afford larger commercial advantages to the state through the Great Lakes.

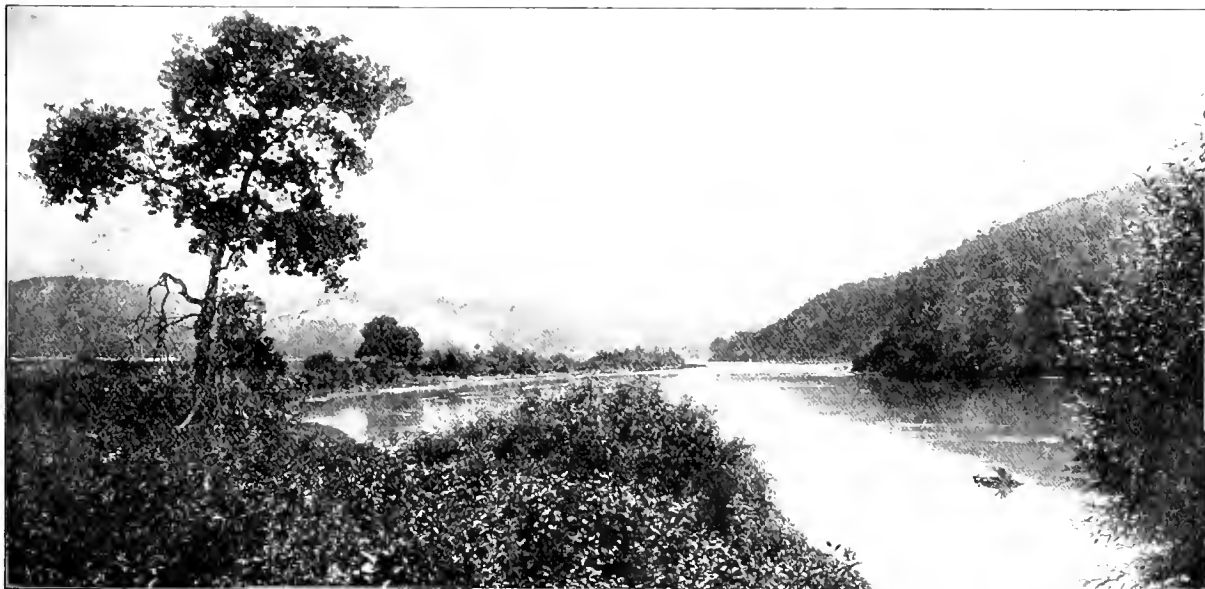


FIG. 1. *In the valley of the beautiful "blue" Juniata—Breaking through one after another of a great series of parallel mountain ridges, the pathway of the Juniata winds in and out this celebrated valley marked through nearly its whole length by grand and picturesque scenery.*

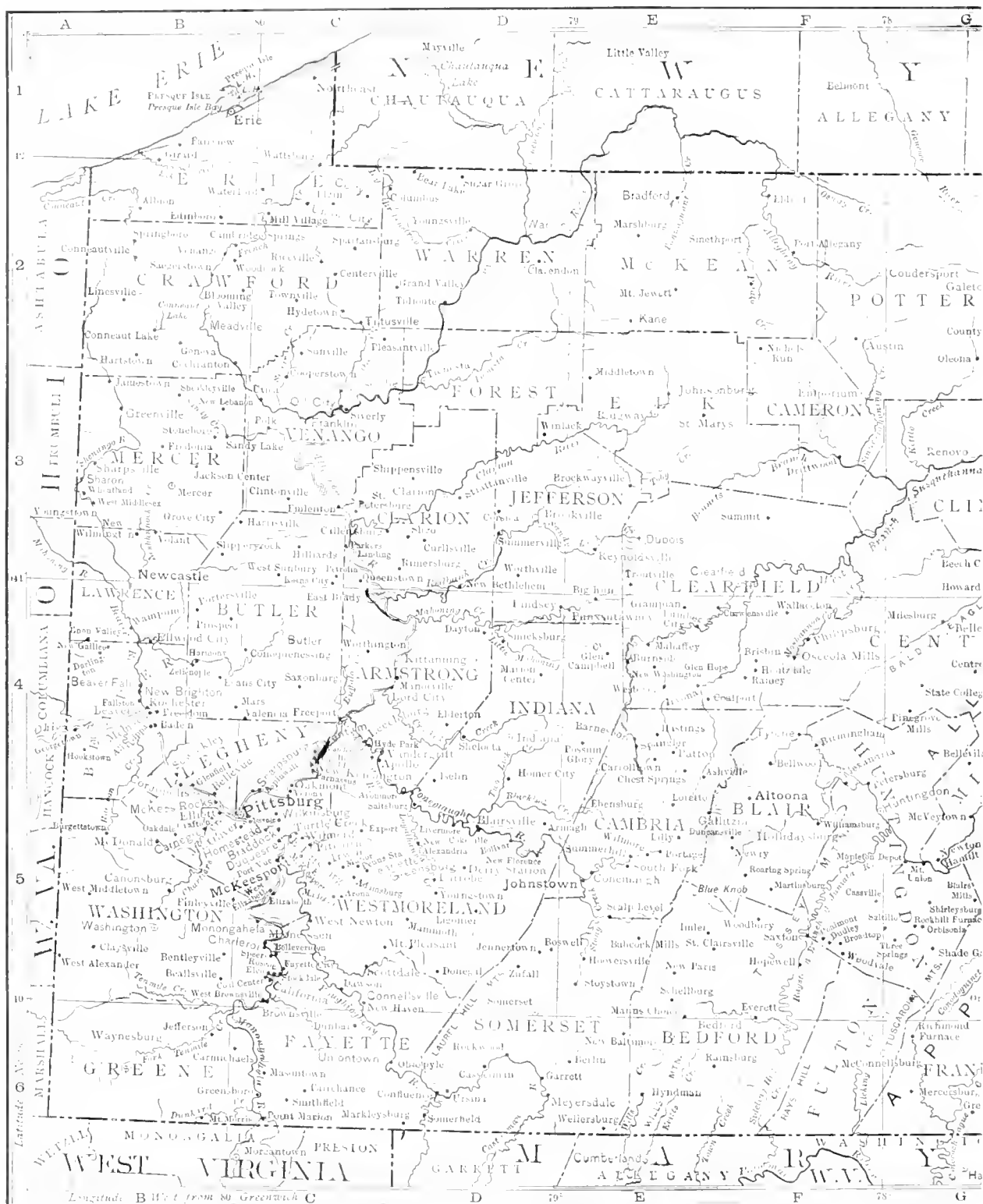
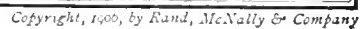


FIG. 2 A political



These boundaries give to Pennsylvania an area of 45,215 square miles, or 28,037,600 acres. (Fig. 2.) In comparative size, Pennsylvania ranks twenty-ninth among the states.

Surface. The eastern United States has five distinct topographical belts extending diagonally across the country from northeast to southwest. (Adv. Geog. Fig. 191.) All the mountains of Pennsylvania are parts of the great Appalachian system, and yet the general surface of the state may be studied

It is broken throughout by low, irregular ridges, between which lie many beautiful valleys of extraordinary fertility.

The second and third belts in the state's topography, the *Appalachian Mountains* and the *Great Valley*, lie wholly within the main Appalachian system. Locally this division is known as the Allegheny Mountains and includes the Great Valley. It lies directly north and west of the Piedmont Belt, and is the most rugged and mountainous part of the

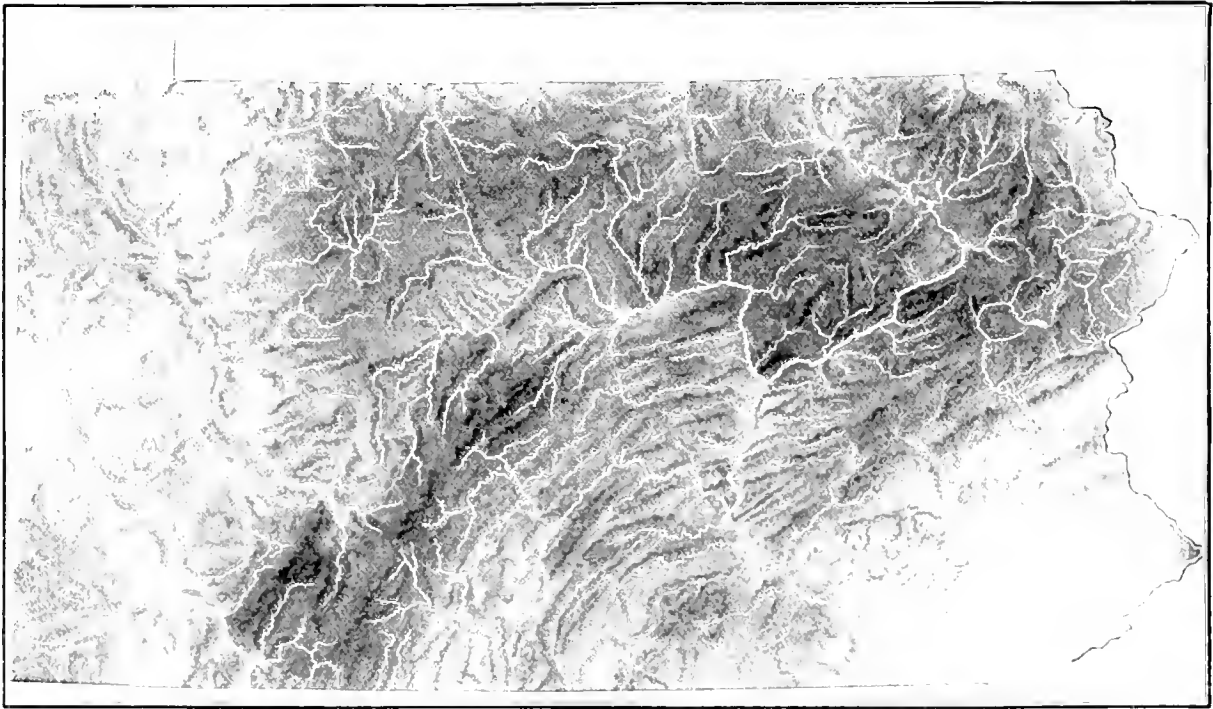


FIG. 3. Relief map of Pennsylvania.

under four rather distinct divisions. Properly speaking, the Atlantic Coastal Plain does not come within the limits of the state.

The first of these divisions, the *Piedmont Belt*, comprises the southeastern section of the state, or that part lying between the Delaware River and the Blue, or Kittatinny, Mountains. This region has an undulating surface, rising in general elevation from sea level on the banks of the lower Delaware to about 500 feet at the base of the mountains.

state. (Adv. Geog. Fig. 191.) The mountains, cut and furrowed into numberless spurs, not infrequently rise in abrupt walls 2,000 feet above sea level. The Susquehanna and the Delaware are the only rivers that break through this mountain chain. Throughout almost the entire upper half of the beautiful Susquehanna and its northern tributaries are found rugged mountain walls forming gaps or narrows. The Delaware River, by cutting diagonally across the Appalachian system,

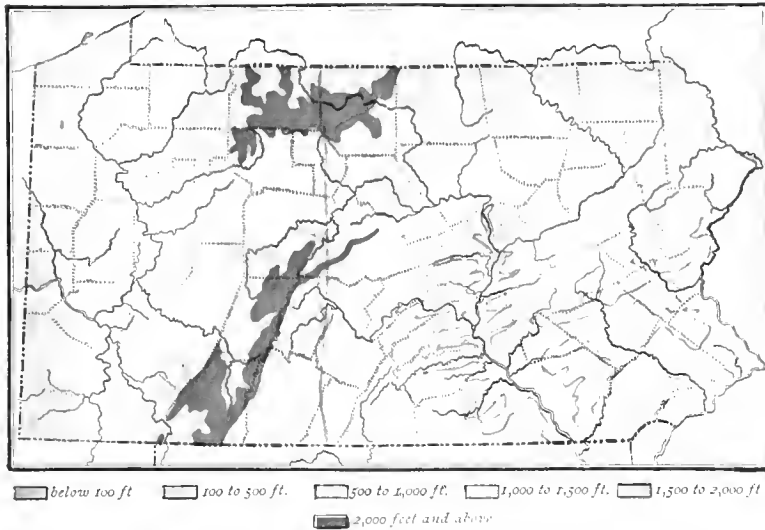


FIG. 4. A physical map of Pennsylvania.

forms, in the extreme northeastern corner of Monroe County, the famous Delaware Water Gap. Magnificent scenery surrounds this remarkable gap where the Delaware has pierced the Kittatinny Range (Fig. 7), and the extreme beauty and varied attractions of the locality have made it a noted summer resort. Together with the famous Mount Pocono region, it has become the summer playground for hundreds of tourists.

The extraordinary wealth of coal deposits and the dense forests of valuable timber in the rugged areas of this section attracted a great army of toilers, and to-day this portion of the state is industrially of vast and increasing importance.

Within this section, too, the most fertile land is found. Here are those wonderfully productive areas, Lancaster, Lebanon, and Cumberland valleys, the pride of the state. These form a part of the Great Valley (Fig. 5), which is, however, more distinct as a valley to the north in New York and to the south in Maryland and Virginia. To these rich

farming districts, seconded by the vast mineral deposits, Pennsylvania owes her great industrial supremacy.

Beginning a little west of the center of the state, the mountains take on the nature of a high, rolling table-land, known as the *Allegheny Plateau*, broken by ranges of irregular hills, intersected in every part by small, irregular, transverse valleys. (Adv. Geog. p. 136.) This forms the fourth topographical section. We have now crossed the Appalachian divide and are approaching the Ohio boundary. Here

the mountainous nature of the country rapidly disappears. The surface is rough and is composed of many irregular hills, all indicating that we are passing into the western foothills of the Alleghenies.

This entire western section, which has a general altitude of from 1,000 to 2,500 feet above sea level, has been much reduced by erosion, and everywhere is broken by short river valleys. The highest point in Pennsylvania is Blue Knob, in Bedford County, with an altitude of 3,136 feet. (Fig. 4.)



FIG. 5. A scene in the Great Valley. Here the beautiful tributary valleys, usually underlain with limestone, are of great fertility and form some of the most famous garden spots in the United States.

Drainage. The topography of a country determines largely the value of the streams to its industrial and commercial life. In many parts of Pennsylvania the rapid current of the streams has always afforded abundant water power for many large industrial plants. (Fig. 8.) In other sections, notably so in the case of the Allegheny and Monongahela valleys, there is little natural power, yet by means of an expensive system of dams and locks an excellent system of navigation is secured, by which commercial interests are greatly enhanced.

There are at least six distinct drainage areas in Pennsylvania. Beginning in the east, we have the Delaware, which forms the eastern boundary, and, with its main tributaries, the Lehigh and the Schuylkill, drains the eastern slope. Proceeding westward into the heart of the Appalachians, we reach the grandly picturesque region (Fig. 6) of the historic Susquehanna; its tributaries, known locally as the North (Fig. 9) and West branches, uniting at North-

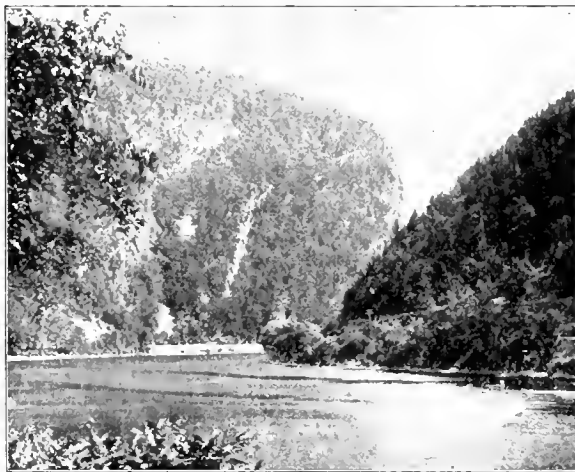


FIG. 7. The Delaware Water Gap. The walls of this narrow gorge, through which the Delaware passes, rise 1,000-1,500 feet higher than the water.



FIG. 6. Glen Onoko Falls in a mountain ravine near Mauch Chunk. The waters descend in a series of cascades about 900 feet.

umberland, form the main river. This stream, rising in New York, zigzagging across the entire breadth of the state from north to south, and entering Chesapeake Bay near the southern boundary, drains nearly one-half the total area. About thirty-five miles south of Northumberland the Susquehanna is joined by the far-famed, "blue" Juniata (Fig. 1), which, through numerous small tributaries, takes its rise in the heart of the Alleghenies. Besides these there are the Genesee, Potomac, and Ohio rivers, with their many small affluents, together with certain insignificant streams flowing into

Lake Erie. Of these, the Ohio, formed by the union of the Allegheny and the Monongahela at Pittsburgh, is the most important.



FIG. 8. Wallenpaupack Falls near Hawley. Near by glass and silk industries have sprung up, attracted by the power afforded by these falls.

The Delaware is navigable for ocean steamers of the largest draught to Philadelphia, and smaller craft may ascend to the head of tide water at Trenton, N. J. The Lehigh, Schuylkill, and Susquehanna are not navigable for any considerable distance. (Fig. 3.)

The Geological Story. The present surface and soil of Pennsylvania have a long, long history. This record extends backward over many millions of years to a time when much the larger portion of North America was covered by long projecting arms of the sea. Portions of Pennsylvania's present surface are, it is believed, parts of one of the oldest lands of North America. That is, these land masses were among the first to emerge from the great sheet of waters that at one time covered all the land areas. In the southeastern part of the state is a belt of old, old rocks about fifty miles wide. They are called the Archæan (ancient) rocks. Two principal exposures of these old rock formations are found in Pennsylvania. One forms the hill country around Philadelphia, the other the base of the South Mountain chain.

Passing over the eastern mountain walls, immediately upon their western slopes we reach an entirely different chapter in the "book of time." This series of rocks is known as the Palæozoic, or age of old life. It marks the beginning of a new era, the most distinct in the history of the world. It covers almost the entire remaining part of the state. In many places, as in the Allegheny Plateau, the strata lie nearly horizontal, but in the main axis of the Appalachian system they are much tilted, folded, and broken. In the higher ridges are found the hardest sandstones, while upon the valley floors are found in great abundance the softer limestones.

Most interesting, perhaps, in the geolog-



FIG. 9. *Profile Rock, North Branch Susquehanna River*

ical story of Pennsylvania is that period known as the Carboniferous. In this wonderful period were accumulated, and in its strata were preserved, fully nine-tenths of all the coal in the world. In the carboniferous areas of the eastern Appalachian valleys, where the coal seams were subjected to the greatest changes by the repeated folding and crushing action during the great upheaval, are found the marvelous deposits of Anthracite or hard coal, while in the great western plateau, where the strata were practically undisturbed, bituminous or soft coal is found. All the coal-bearing rocks

consist of alternations of sandstones, shales, and limestones interbedded with seams of coal and beds of iron ore. Beneath every coal seam there is always a thin layer of clay called the "under clay," and above is sometimes found a shale, called a black or roof shale. Usually there is one foot of coal to about fifty feet of rock. In many parts of the state, notably in the western and southwestern sections, the deep underlying Devonian sandstones are charged heavily with petroleum and natural gas.

Climate. The state has a varied climate. The low-lying southeastern section is, for the entire year, considerably warmer than are the more elevated northern and western uplands, a difference so marked that variations

of from one to three weeks are common in the harvesting of crops. In Philadelphia the mean temperature for January is about 30 degrees, and for July 76.2 degrees. (Fig. 12.) For Wilkes-Barre, among the mountains, the corres-



FIG. 10. *A terminal moraine (Adv. Geog., p. 63), in the glaciated area of the Delaware Valley. (Adv. Geog., Fig. 180.)*

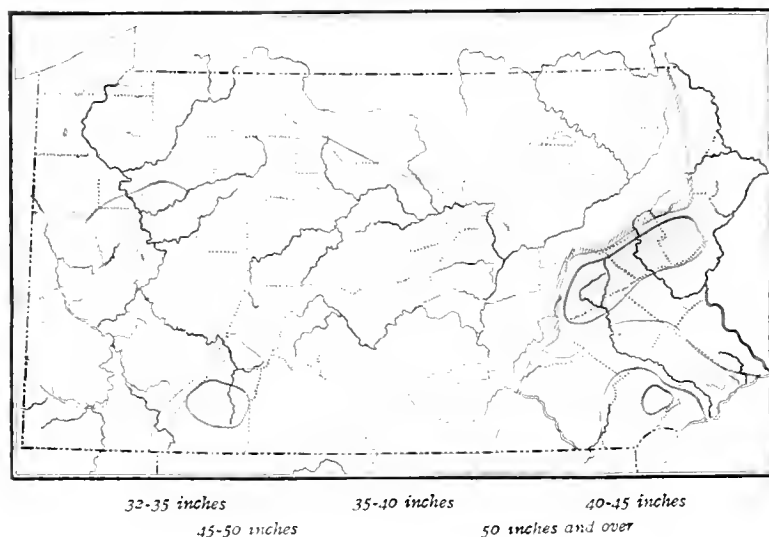


FIG. 11. The distribution of the annual rainfall over the counties of Pennsylvania from 1898 to 1904.

ponding figures are 26 and 71 degrees, for Pittsburg, 31 and 76 degrees, and for Erie, on the lake shore, 26 and 70 degrees. Summer heat in various sections reaches 107 degrees, and quite often is prolonged far into the autumn. Snow in some of the northern counties falls to the depth of from one to four feet, and remains on the ground from three to five months. Here the temperature at times reaches 35 degrees below zero. The average annual rainfall for the entire state is 44.5 inches and is very evenly distributed both as to amount and season. (Figs. 11, 13, and 15.) The growing season for all kinds of farm crops is dependent upon the earliest and latest killing frosts. In Pennsylvania, these extremes vary from five and a half or six months in the northern parts, to six and a half or seven months in the southern sections.

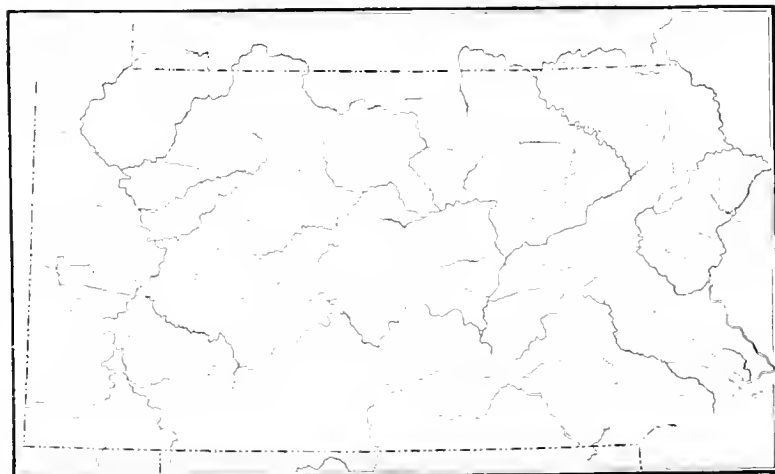
Forests and Forest Products.

The plateau, together with the middle section of the state, originally was the region of dense

pine and hemlock forests. Besides these, an abundance of white oak, hickory, chestnut, walnut, and cherry grew in the lower altitudes; in the middle altitudes were found pitch pine, maple, beech, and black and yellow birch; and in the highest altitudes of the state, black and red spruce, balsam, fir, and larch. With this wealth of forest Pennsylvania for more than half a century has stood among the first states in the value of lumber and timber products. (See Figs. 14, 15, and 45.) Although very nearly 23,000 square miles are still

counted as forested, yet much of all the really valuable timber has been removed. However, there are, in certain sections of the state, considerable areas of virgin forest. Because of its abundant supply of hemlock timber and because of the value of hemlock bark in the tanning of hides, Pennsylvania, for many years, led all the states in the manufacture of leather.

A little careful foresight fifty years ago would have husbanded for the state great



Isotherms for January

Isotherms for July

FIG. 12. The mean temperature of Pennsylvania in January and July.

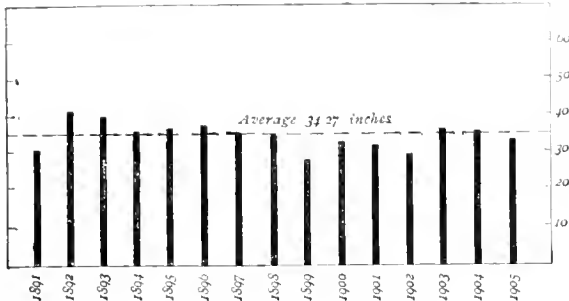


FIG. 13. The mean annual rainfall at Erie from 1891 to 1905.

preserves of profitable forested lands. To-day the bleak, barren sides of nearly all the mountains within the state are a most impressive reminder of the inconsiderate depletion of the timbered areas of the state.

Recently, however, through the State Forest Commission, Pennsylvania has taken active measures for the restoration and preservation of her forests. In order to conserve the water supply, provision has been made for the purchase of three forest reservations, of not less than 40,000 acres each, at the head waters of the three principal river systems. The lands in these holdings will amount to more than 600,000 acres. In 1901 the Bureau of Forestry, formerly a branch of the Department of Agriculture, was erected into an independent department. During 1903 an act was passed for the erection of buildings for a school of forest wardens, and the estab-



FIG. 14. A virgin forest of white pine. Hemlock and white pine are now the chief merchantable species.

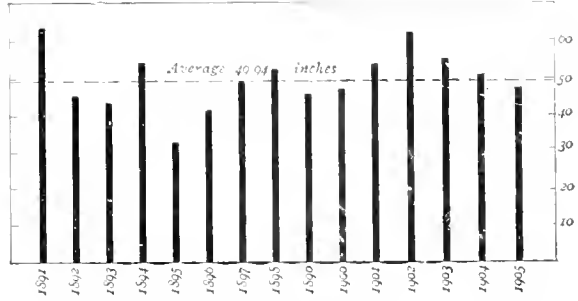


FIG. 15. The mean annual rainfall at West Chester from 1891 to 1905.

lishment of a sanatorium for consumptives upon the Mont Alto reservation.

Animal Life. The early settlers found in the virgin forests of Pennsylvania many varieties of animal life. Bears, wolves, foxes, deer, panthers, otters, porcupines, beavers, raccoons, and various other species abounded. The woods and streams were filled with turkeys, ducks, geese, and pigeons and the



FIG. 16. Forest of hemlock and hardwoods. To-day the areas of virgin forest are found chiefly in Huntingdon, Sullivan, Potter, Elk, Pike, and Juniata counties.

streams held almost endless varieties of fish. Now the larger game has practically vanished, and the lesser game, the song and other birds are saved to the state only by the protection of the law. Pennsylvania now maintains a large and well-nigh perfect system of hatcheries. Here shad, trout, black bass, and other varieties are produced in large numbers and distributed among the head waters of the tributary streams of the state.



From a painting in the rooms of the Historical Society of Pennsylvania, presented by his grandson.

FIG. 17. William Penn, the founder of Pennsylvania, at the age of 22.

return for a debt of £16,000 owed his father, Admiral Penn, by Charles II, secured a grant of the territory west of the Delaware River, lying between 40 and 43 degrees north latitude, and extending west five degrees. In this grant Penn was given full rights both as to the ownership and to the government of the land.

Difficulties growing out of the Delaware boundaries continued until 1732, when the sons of Penn and Lord Baltimore came to an agreement. Their boundary lines were to follow the present western boundary of Delaware northward tangent to the twelve-mile circle about New Castle, Del., to a point just fifteen miles south of the latitude of Philadelphia. In describing the twelve-mile circle about New Castle, the

History. The first actual settlement recorded within the present limits of Pennsylvania was made by Johan Printz, who, with other colonists, in 1643 founded New Gottenberg, on Tinicum Island. On March 4, 1681, William Penn (Fig. 17), in re-

court house in that city was taken as the center. On the west this arc became tangent to the boundary of Maryland at a point about five miles south of the northeast corner of Maryland, and thus was formed the famous little triangle in Pennsylvania's area,

which is a part of London, Britain Township, Chester County, and contains about 800 acres. While all the people within this triangle are citizens of Pennsylvania, their voting is done in Delaware, and all crimes committed within this area are tried in Delaware courts and punishments are imposed in accordance with the laws of Delaware.

Finally, in 1763, all boundary difficulties were adjusted. A survey was made by Charles Mason and Jeremiah Dixon, two noted English mathematicians and surveyors, and the line thus established has since been

known as the Mason and Dixon Line.

Conflicts growing out of disputes over land boundaries were frequent, and many of them were quite serious. The trouble at Fort Duquesne with the French in



From the original portrait by Joseph Siffrein Duplessis in the Museum of Fine Arts, Boston.

FIG. 18. Benjamin Franklin, statesman, diplomat, philosopher, author.

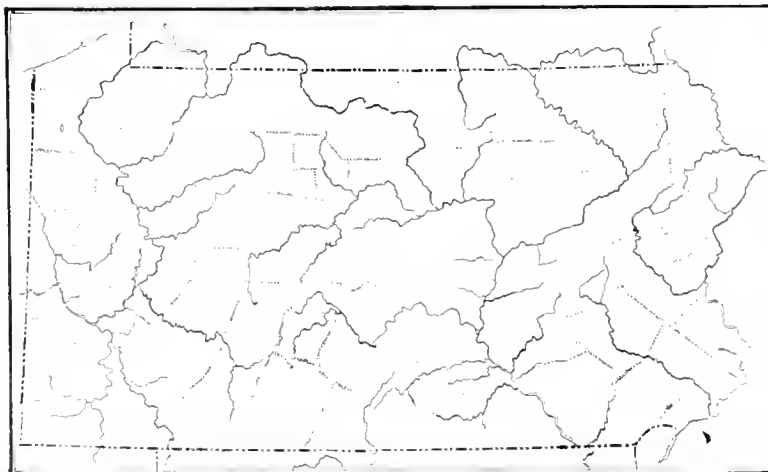


FIG. 18. The earliest explorations and settlements in Pennsylvania.

1775, the Pennsylvania War about 1764, and the Wyoming Massacre in 1778 (Fig. 65) were among the most bitter contests. (Fig. 18.) At the close of the Revolutionary War Pennsylvania enjoyed commercial



FIG. 20. Valley Forge. Famous as the site of Washington's encampment in the winter of 1777-78. On the heights above may still be seen the remains of defensive ramparts.

supremacy in the colonies. This, together with the fact that when the thirteen colonies were formed into the Thirteen Original States the group had somewhat the shape of an irregular arch and that Pennsylvania was almost central in this arch, probably led to its being called the "Keystone State."

A Provincial Congress first met in July, 1774, at Philadelphia. A Provincial Convention in 1775 authorized the preparation of defence for the colony. The first state constitution was drawn up September 28, 1776, and provided for a Supreme Executive Council, one Legislative House, and a Board



FIG. 21. Independence Hall, Philadelphia.

of Censors. The rapid growth and consequent prosperity of the state gave rise to various forms of unrest. The revolt known as the Whisky Rebellion, suppressed in 1794, grew out of a difficulty with the Scotch-Irish

regarding the Federal excise tax.

Pennsylvania's part in the Civil War was most commendable. Five companies of her troops were the first to arrive in Washington, D. C., under President Lincoln's call for volunteers, April 5, 1861, and twenty-five regiments were formed in less than one month. The state was invaded three times, twice at

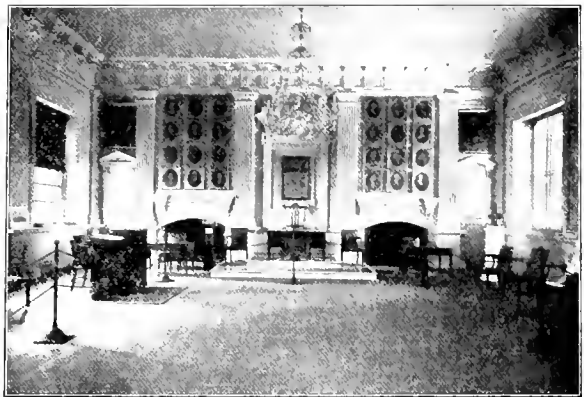


FIG. 22. Interior of Independence Hall. In this room was signed the Declaration of Independence.

Chambersburg, and once by General Lee's army when the decisive battle of the war was fought at Gettysburg.

Since the Civil War the most notable thing in connection with Pennsylvania has been the marvelous development of her natural resources. To-day the coal, oil, and steel industries of the state are unparalleled in the world. Out of this perhaps too rapid

growth have arisen many serious labor troubles, generally taking the form of lockouts or strikes. The most desperate were the strike of the railroad employees at Pittsburg, in 1877; the Homestead strike at the Carnegie Company's Mills, July 6, 1892; and the coal miners' strike in the Hazelton region in 1902.

Industries. No other state has been so favored in natural resources as Pennsylvania. The raw materials for many kinds of manufactures have always been abundant. In the production of lumber, tan bark, tobacco, cereals, crude petroleum, limestone, and slate, the state stands among the first. But the controlling industries of Pennsylvania have always centered about its mines of coal and iron. These are the chief sources of its wealth and prosperity.

Agriculture. Pennsylvania leads all the Atlantic Coast States in agriculture. The part of the state comprised in the counties of Delaware, Chester, Bucks, Montgomery, Northampton, Lehigh, Berks, Lebanon, Lan-

caster, and York ranks among the most productive sections, agriculturally, of the United States. Large crops of almost all staple farm products are harvested annually. The well-kept farms, the large brick dwellings, and the great bank barns all combine to tell of the prosperous condition of this region. (Fig. 29.) Among the six wealthiest agricultural counties of the United States, Lancaster County, Pennsylvania, easily stands first in the list. The money value of the

products for this county alone for the year 1900 was \$9,210,800. The many arable and highly fertile valleys even in the remote mountain sections render it possible to engage in farming more or less extensively in nearly every part of the state. About 65 per cent of all the state's area is included in farms, and about 68 per cent of this is improved. There are about 224,248 farms in the state, fully 74 per cent of which are operated by the owners. The average size of the farms has decreased steadily since 1850. Then the average

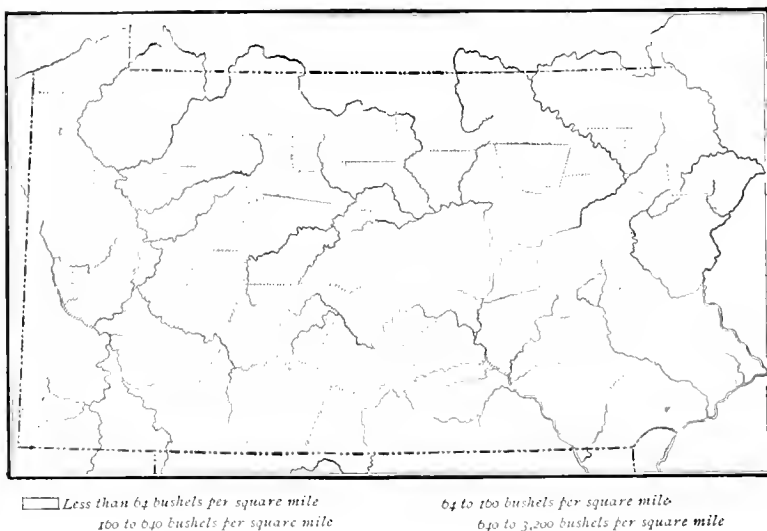


FIG. 23 The yield of wheat per square mile.

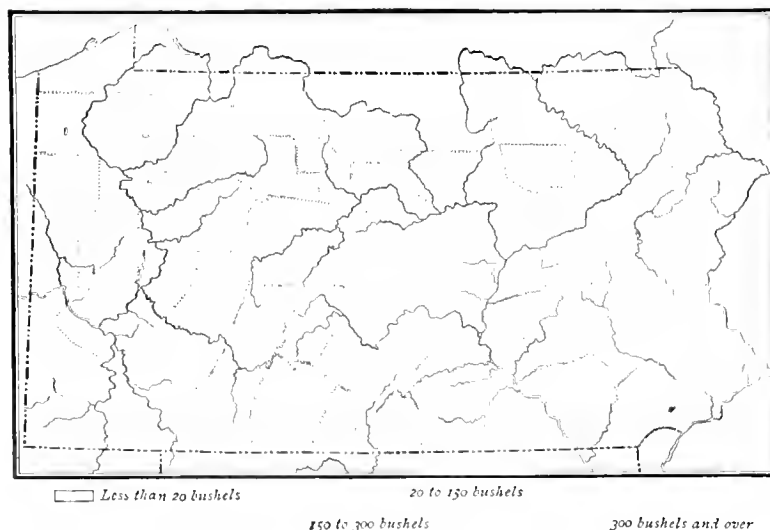


FIG. 24 The yield of rye per square mile.

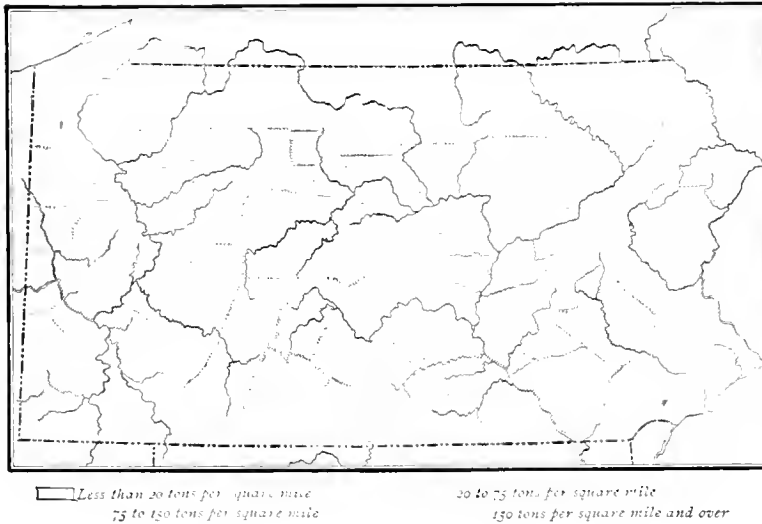


FIG. 25. The production of hay and forage per square mile.

farm contained 116.9 acres, as against 86.4 acres in 1900. This reduction in acreage has been highly conducive to better farming, and consequently to larger harvests. (Fig. 27.) These conditions have increased the success of farming and have given our rural population a freer and more prosperous life, which make always for a better type of citizen and a broader and more loyal patriotism.

The soil and climate of Pennsylvania are exceedingly favorable to the growth of cereals, so that in this branch of agriculture the state takes high rank. Pennsylvania yields more than twice as much corn and four times as much wheat as New York, her closest rivals among the Atlantic Coast states being Georgia in corn and Maryland in wheat. The wheat crop for 1904 exceeded 21,000,000 bushels. (Fig. 23.) She ranks first among these states in oats, and, in the production of rye (Fig. 24), has nearly one-sixth of the total crop of the United States. Potatoes form one of the chief money crops of the state. New York

alone of the eastern states surpasses it in acreage and production. Climate and soil conditions encourage the growth of grass, and in 1905 only New York and Iowa excelled Pennsylvania in production of hay. (Fig. 25.) At the same time the value of Pennsylvania's crop was more than double that of Iowa. Tobacco is a profitable crop in Pennsylvania and is a considerable factor in her agricultural resources. In 1904 there were raised 18,600,000 pounds valued at \$1,658,500. (Fig. 26.)

Pennsylvania's farms, together with their improvements, including buildings, have a value of \$898,272,750. If to this we add the value of implements, machinery, and live stock, we have a total of \$1,051,629,170.

In the distribution of agricultural products within the state one of the most vital questions is the accessibility of the sources of supply to the markets. The great dairy farms that daily send to the cities thousands of gallons of milk together with tons of butter and cheese, dressed poultry, and pre-

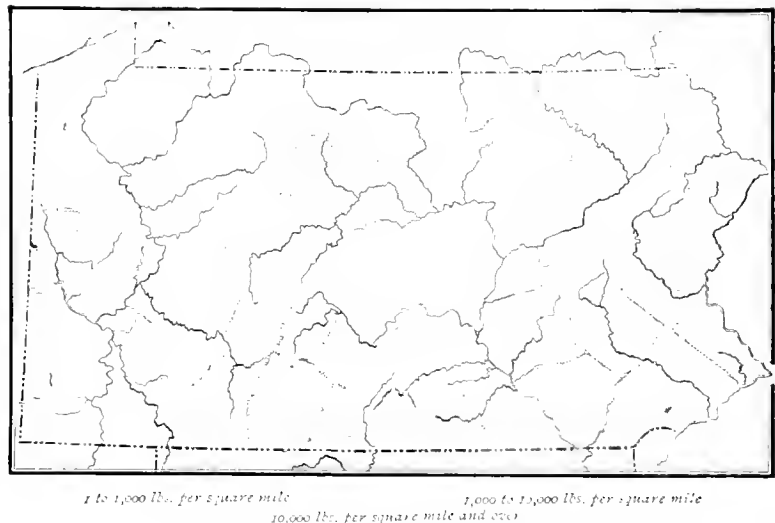


FIG. 26. The production of tobacco per square mile.

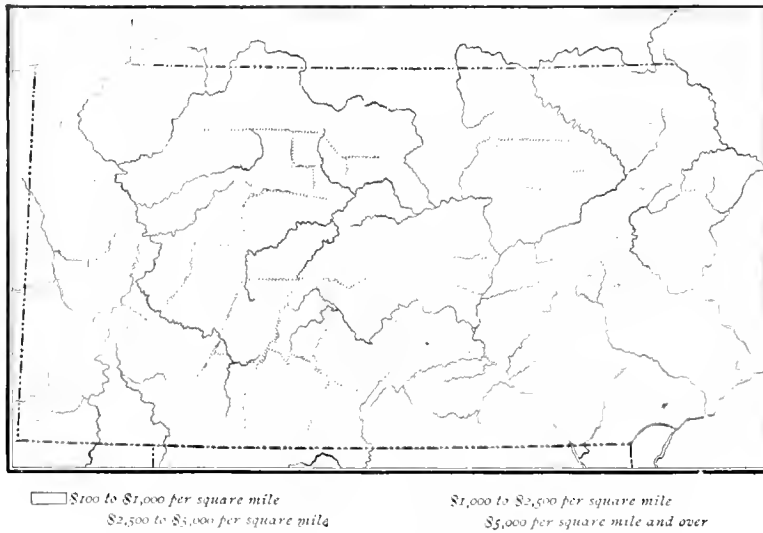


FIG. 27. The value of farm products per square mile.

pared meats of all kinds, must be within a few hours by rail of each morning's market.

The demand for all kinds of food-stuffs made by large cities upon the farming districts lying within easy reach is very great. For Philadelphia, a very considerable portion of all the nearby counties is taxed to their utmost to supply the city's daily demands for food from farm and garden. The fertile lands of New Jersey lying along the Delaware, too, contribute daily large quantities of food-stuffs for the city's consumption. What is true of Philadelphia is proportionally true of Pittsburg, or of any other great city.

Horticulture. Among fruit producing states Pennsylvania ranks third in value of products (Fig. 28), being one of the largest producers of orchard fruits in the country. Fully 65 per cent of her fruit trees are apple. Among apple producing states, New York and Pennsylvania lead, each state in 1900 reporting an apple crop of more than 24,000,000 bushels, with New York only slightly in advance.

Stock Raising. Much of the state's surface that is too hilly or mountainous for profitable tillage is admirably adapted to stock raising and dairying, and these are important industries. Every decade since 1850 has witnessed a large increase in the number of dairy cows in the state. Now only four states have a larger number than Pennsylvania. The sale of milk alone in 1901 returned to the state \$1,724,000, while from butter the receipts were nearly \$10,000,000.

In the production of cheese Pennsylvania ranks fifth among the states. The number of stall and grass fed cattle, hogs, and sheep prepared for the markets of the state amounts each year to hundreds of thousands.

Poultry Raising. The farmers of Pennsylvania are realizing that poultry raising may be made a source of much revenue and profit, the state now ranking sixth in value of poultry and third in value of eggs produced. On the farms of the state in 1900 were raised 10,553,100 chickens, 260,000 turkeys,

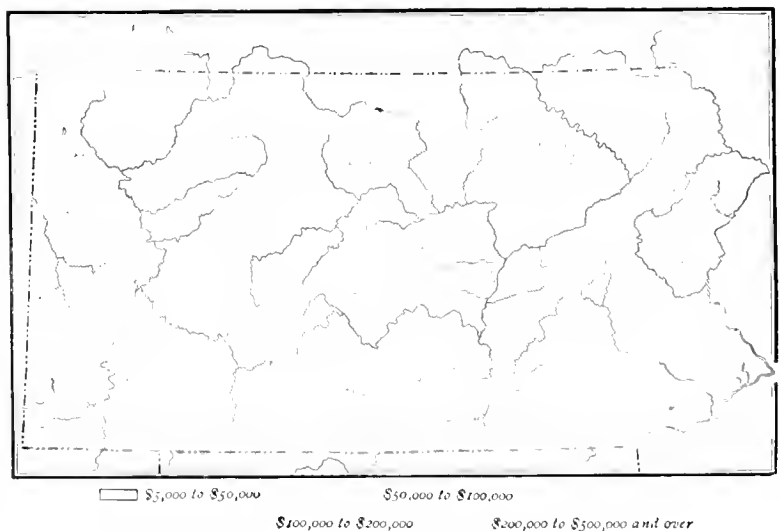


FIG. 28. The value of fruit products per square mile.



FIG. 29. A characteristic farm scene in the heart of the far-famed Cumberland Valley.

61,000 geese, and 171,000 ducks, the total market value of which, June 1, 1899, was approximately \$4,500,000. The farmers marketed, in 1899, 67,000,000 dozen eggs having a money value of \$9,080,725, an average price at the farm of thirteen and one-half cents per dozen. In 1900 there were about 17,000,000 dozen more eggs marketed in the state than in 1890, a gain of about 34 per cent.

Mineral Resources and Mining. Pennsylvania outranks all other states in value of mineral products. Practically one-half of all the coal mined in the country comes from the "Keystone State," and more than one-fourth of the total value of the mineral products for the United States is contributed by Pennsylvania.

The Appalachian coal fields cover almost the entire western slope of the Appalachian chain from northern Pennsylvania southward into Tennessee and Alabama. The fields embrace about 71,000 square miles and are the

richest in the world. (Adv. Geog., Fig. 221.) Nearly 16,000 square miles of this area belongs to Pennsylvania, the anthracite fields of the state covering 484 square miles additional. Western Pennsylvania contains large deposits of natural gas and petroleum. In many parts, also, iron is found in the forms of magnetite

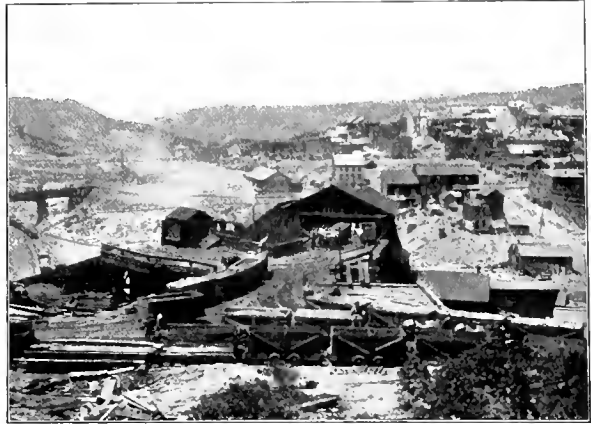


FIG. 31. Shenandoah, a busy center in the Schuylkill coal region. This region forms one of the three great mining districts in the anthracite fields.

and brown hematite. Other minerals are iron, zinc, cobalt, nickel, lead, copper, tin, chrome, salt, and soapstone. White marble, slate, many varieties of valuable building stone, and excellent brick and fire clays are found in practically inexhaustible quantities.

Pennsylvania leads the country in mining, far outdistancing all other states in production of coal, ranking first in natural gas, limestone, sandstone, and slate, and being surpassed in value of petroleum only by Ohio and West Virginia

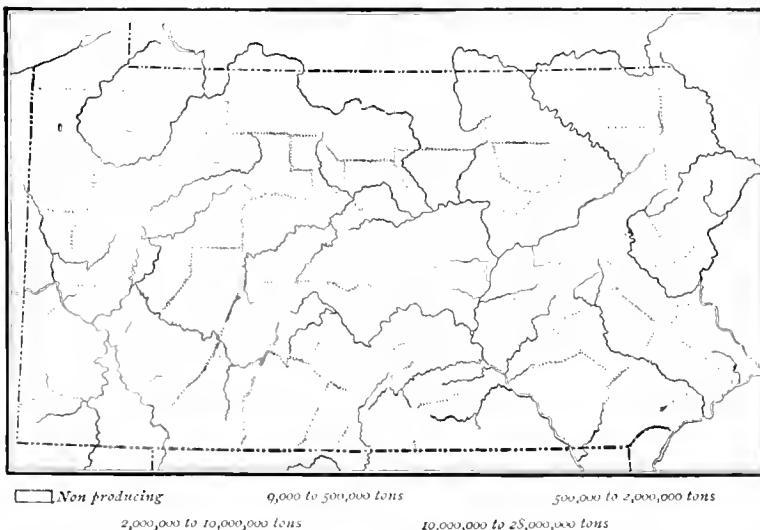


FIG. 30. The coal fields of Pennsylvania and the production of coal by counties.

Coal. The Pennsylvania annual output of coal exceeds in value that of the total mineral product of any other state, the total yearly tonnage since 1880 being about equal in amount to that

of all the other states combined. (Fig. 30.) Pennsylvania produces the only high-grade anthracite in the world. It has been mined since 1820. In 1840 it came into use for smelting purposes, and then the demand for it increased rapidly. The six most productive anthracite counties are Lackawanna, Luzerne, Schuylkill, Carbon, Northumberland, and Columbia. (Figs. 31 and 32.)

Anthracite burns with little flame but with intense heat, and gives off little smoke, while bituminous or soft coal burns freely with much flame and smoke. Bituminous coal is found in every county north and west of the Allegheny Mountains except Erie. (Fig. 33.) This coal was first extensively used in iron smelting in 1875, and since that time its annual output has far exceeded that of

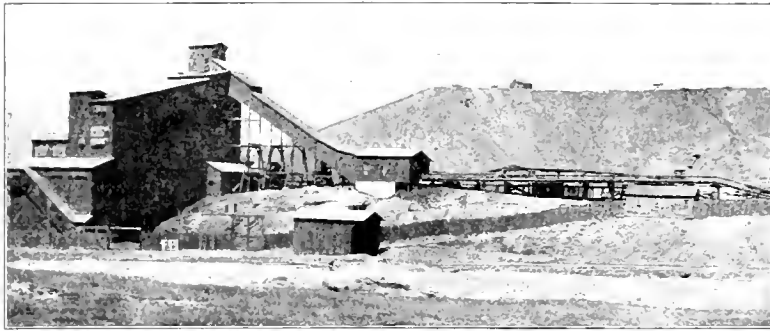


FIG. 32. A coal breaker at an anthracite mine. The coal hoisted from the mine and carried to the top of the breaker, as it descends through the works is crushed, cleaned, and sorted and is discharged into bins or into cars that enter the lower part of the breaker.

anthracite. In 1874, there were 12,320,000 short tons mined; in 1904, the output of bituminous coal was 97,950,000 tons, worth \$94,400,000 at the mines. In 1814 the first ship-

ment of anthracite was made from Carbondale to Philadelphia. Since that date the anthracite mines of Pennsylvania have yielded more than

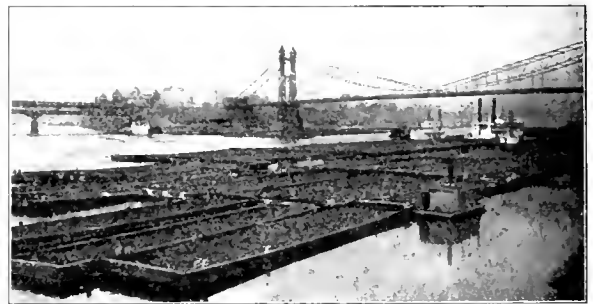


FIG. 34. A characteristic river scene in the coal regions. The barges, loaded with coal, are on their way from the mines to the great industrial centers.

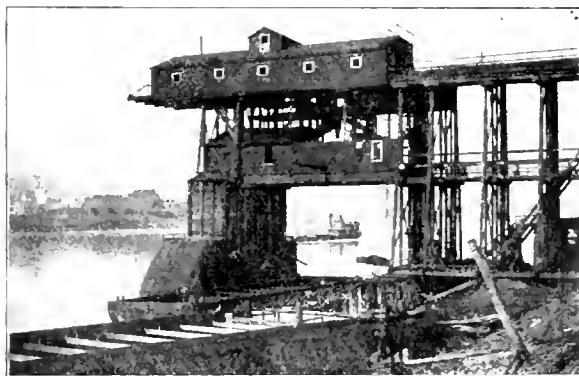
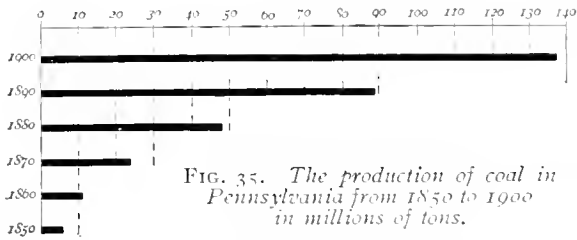


FIG. 33. A river tippie at a bituminous coal mine. The coal is carried from the mine to the top of the tippie, where it is screened, loaded on dumps, and then charged into barges in the river below.

one and a half billions short tons, and the bituminous mines only a little less than that number, the total production amounting to more than 50 per cent of all the coal mined in the United States. (Figs. 34 and 35.)

Petroleum. Petroleum was long known to the Indians of the Alleghenies. The oil was found floating upon the surface of streams and was gathered by the Indians, who sold it as "Seneca oil." Not until 1859, however, was oil known to exist in subterranean reservoirs. Boring for oil was first begun August 6, 1859, and after twenty-two days, and at a depth of sixty-nine feet, oil was "struck." Soon the excitement in the oil fields was as intense as that in California at the time of the discovery of gold. Between



1860 and 1900 more than 1,000,000,000 barrels of petroleum were taken from the wells of Pennsylvania. (Fig. 37.)

This crude oil is carried by means of boats, railroads, and, more recently, through a system of iron pipes laid underground to the great refineries at Philadelphia, New York City, and Cleveland, where the crude oil is refined into kerosene or coal oil.

Natural Gas. Closely associated with petroleum is natural gas. (Fig. 36.) For a time its production in Pennsylvania was so great that its use for domestic and manufacturing purposes outranked that of coal. In 1904 the value of the natural gas produced in Pennsylvania was nearly one-half that for the entire country, the value of its product being more than double that of West Virginia, its nearest competitor.

Quarrying. In the industry of quarrying valuable building stone Pennsylvania stands without a rival. Both grey and brown sandstones are abundant; the brown, because of its greater durability, is one of the best building stones in the state. All through the valleys of the Juniata and of the North Branch of the Susquehanna these quarries are found. A conglomerate sandstone, very hard and durable, is also found in large quantities. In limestone quarrying the state has no competitor. Two-fifths of the total output is used for flux

in furnaces and nearly the same amount is burned into lime, of which the state is by far the greatest producer. Pennsylvania's production of slate is about two-thirds that of the entire country. (Fig. 38.) Of clay and clay products, and Portland cement, Pennsylvania produces nearly one-half the total output for the United States.

Manufactures. If in the state's extraordinary industrial development, the great wealth of raw material is the first factor, the second factor lies in the advantageous conditions for marketing its products. Since 1850 Pennsylvania

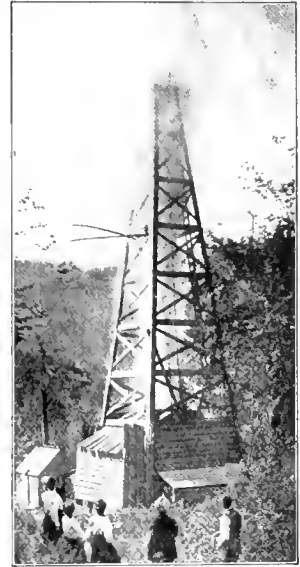


FIG. 37. Shooting an oil well. A typical scene in an oil region.

has ranked second in the United States in manufacturing industries. (Fig. 39.) By far the most important industry is the manufacture of iron and steel, an industry in which Pennsylvania leads the country.

The first stove made in the United States was a "jamb stove," made at Germantown about 1735. The cannon balls used by General Jackson at the battle of New Orleans were cast in Fayette County in 1797. In 1831, about two years after the first locomotive was built in the United States for actual service, locomotive building was begun by a company in Philadelphia as a

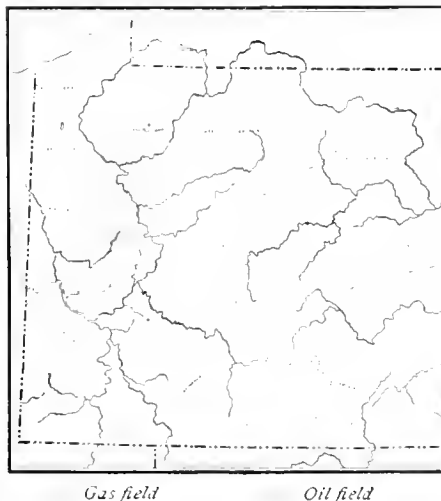


FIG. 36. The oil and gas fields of Pennsylvania.



FIG. 38. A slate quarry at Bangor. The slate quarries found here are among the largest in the world.

regular industry. This pioneer company, which completed "Old Ironsides" in 1832, is still in existence, and is perhaps the largest single industrial establishment in the United States. It is not an incorporated company, but a copartnership. This one company now has a capacity of more than one thousand locomotives a year and an invested capital exceeding \$12,000,000.

Among the first Bessemer rails rolled in America were those made in 1867 at Johnstown, Pa. The Johnstown mills, together with those at Steelton, are now the largest producers of Bessemer steel in the world.

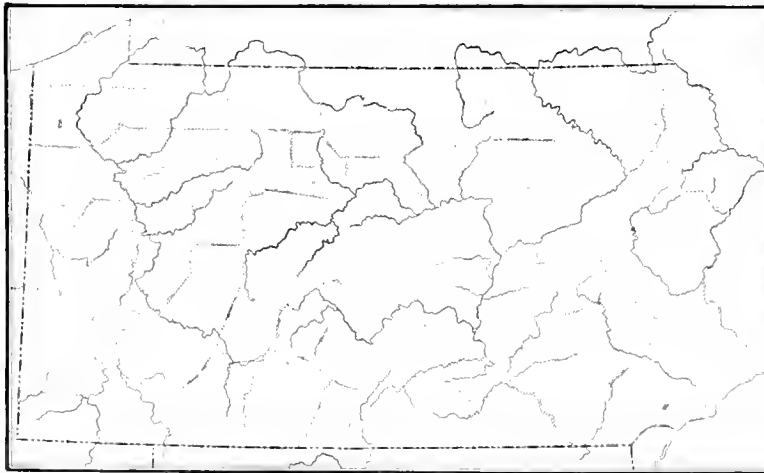


FIG. 39. The value of manufactured products per square mile.

The value of the annual production of the iron and steel manufactories of the state exceeds \$430,000,000.

The first successful attempt to establish ironworks in Pennsylvania was made in 1716, when a forge was erected on Manatawny

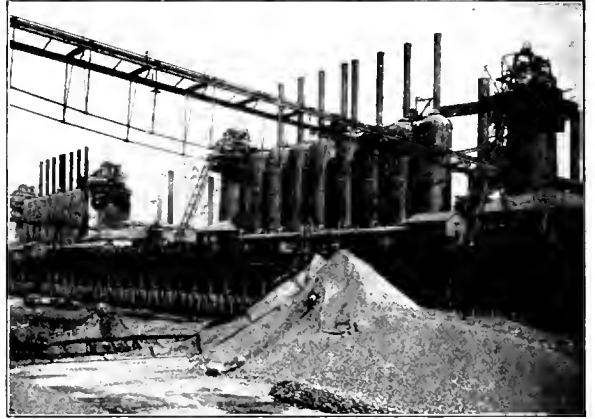


FIG. 40. A blast furnace at Duquesne. The separation of the iron from the ore in the blast furnace marks the first step in the making of steel.

Creek in Berks County. The first blast furnace west of the Allegheny Mountains was erected on Jacob Creek, in Fayette County, in 1789, and was "blown" in 1790. Now the greatest centers of this industry are Pittsburg, McKeesport, Duquesne (Fig. 40), Johnstown, Newcastle, and Steelton. Other

great industries are the manufacturing of tin and tin plate, and ship building. Textiles of all kinds are manufactured, Pennsylvania ranking second among the states in production. Carpets, hosiery and knit goods, and cotton and woolen goods, and silk and silk goods, are produced in surprisingly large quantities. During the last half century the mechanical industries of Pennsylvania have had a phenomenal growth. The state's population in these years grew from 2,311,786 to 6,302,034, while the annual

average number of wage-earners employed in manufacturing establishments increased from 146,766 to 733,834, embracing, in 1900, 11.6 per cent of the entire population as against 6.3 per cent in 1850. (Fig. 48.)

The introduction of natural gas as a fuel gave a great impetus to the industrial life of Pennsylvania. This fuel is unequalled in value for the manufacture of glass (Figs. 42 and 43), the puddling of iron, the roasting of ores, and the heating of large furnaces for the manufacture of steel. (Fig. 41.)

In 1900 the commercial value of the products turned out by the plants of the twenty-five leading industries of the state was more than \$1,291,000,000.

In the manufacture of coke Pennsylvania stands alone, the output for the state being fully three-fifths of the entire output for the United States. In 1904 there were at least

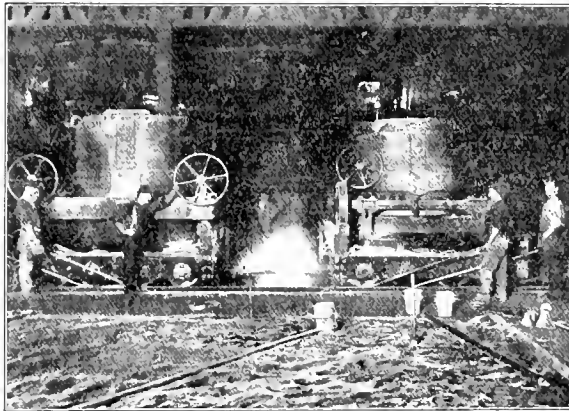


FIG. 41. A modern open-hearth furnace. Here iron direct from the blast furnace is being converted into steel.

ovens or retorts. It is used chiefly as fuel in smelting or separating metals from the ores.

Formerly in the manufacture of coke a large percentage of valuable matter was lost, but in the method now employed many

15,650,000 tons produced in Pennsylvania. (Fig. 44.) Three-fifths of this, or about one-half the product of the country, was made in the celebrated Connellsville (Fig. 73) district, lying almost wholly in Fayette County.

Coke is made by roasting or burning certain soft coals in specially prepared

ovens or retorts. It is used chiefly as fuel in smelting or separating metals from the ores.

Formerly in the manufacture of coke a large percentage of valuable matter was lost, but in the method now employed many

by-products are secured. One hundred tons of soft coal will yield seventy-six gross tons of coke, two and three-fourths tons of coal tar, one and one-fifth

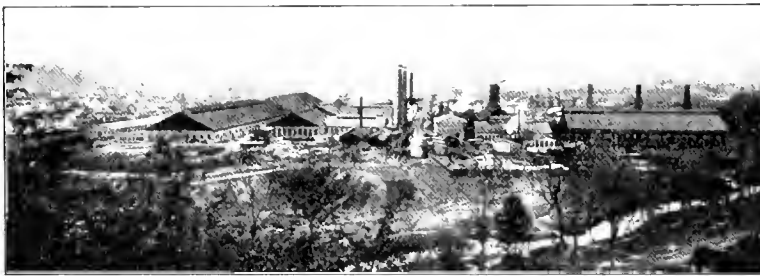


FIG. 42. A great glass plant at Jeannette in the natural gas belt. Important manufactures of window, flint, and other glass are centered here.

tons of ammonia sulphate, and about 8,650 cubic metres of fuel gas. The coal tar thus produced is likewise the source of a large number of by-products. From a chemical

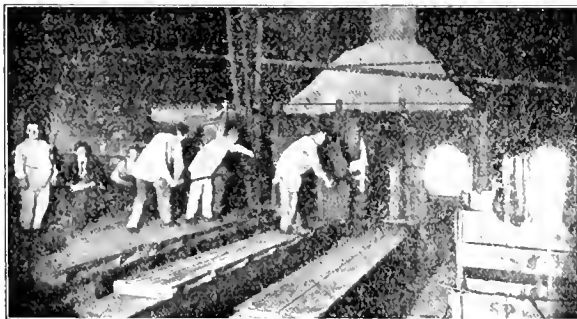


FIG. 43. An interior view in a glass plant, showing the workmen heating glass at the furnaces

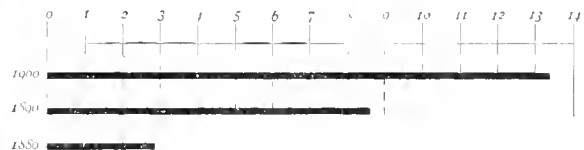


FIG. 44. The production of coke in Pennsylvania in millions of tons at each census year since 1880

composition with benzine, many articles of commerce are produced, chief of which are the aniline dyes, naphtha, gasoline, and carbolic acid.

Transportation. At the beginning of the nineteenth century efforts were inaugurated to improve inland transportation for Pennsylvania. The securing of better highways was the first step, and this led to the building of the Philadelphia, Lancaster, and Pittsburg pike. Similar roads, for shorter distances, and many bridges (Fig. 49) also were built. The so-called "National Pike" running through Cumberland, Md., and on to Washington, Pa., it is believed followed the trail of General Braddock's army. A little later more than \$50,000,000 was expended in a system of

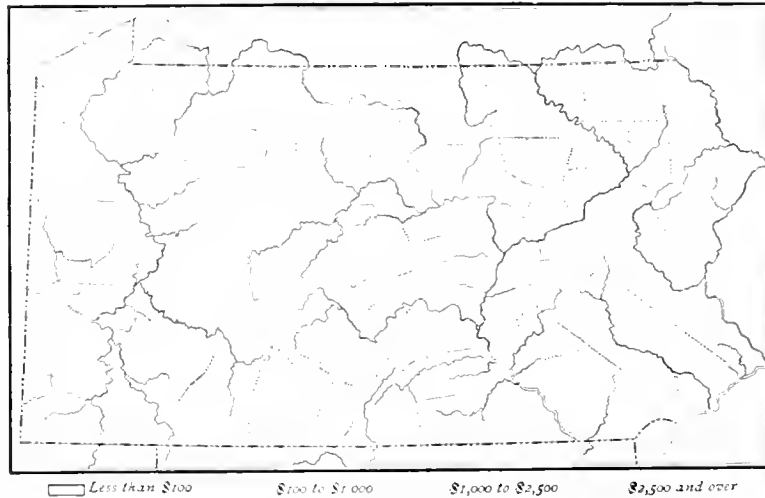
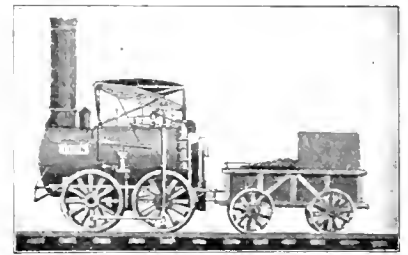


FIG. 45. The value of lumber and timber products per square mile.

ests of Pennsylvania, and in 1904 there were practically 11,000 miles of railroad within the state. (Fig. 46.)

The first indisputable record of railroad building in the United States is that of a road three-quarters of a mile long

constructed by Thomas Deiper, in Delaware County, Pa., in 1809. The second road built in the state was at Mauch Chunk, Pa. (Fig. 6), and was three miles long. These, however, were tramways operated by horses. The first attempt made in the United States to use a locomotive engine for railroading purposes was on a track between Carbondale and



By courtesy of Edward A. Penniman, Honesdale.

FIG. 47. The "Stourbridge Lion," built in 1829. Its speed was about ten miles an hour.

Honesdale, Pa. This road, sixteen miles long, was built by the Delaware & Hudson Canal Company. The engine used was built in England. It was named the "Stourbridge Lion." (Fig. 47.) The trial trip was made



FIG. 46. A "limited" train at full speed. The train crosses the state in about seven hours, running at a rate of a little more than fifty miles an hour.

canals. These almost always paralleled the principal rivers of the state.

Prior to 1848 railroad building progressed slowly, yet at that time Pennsylvania, with about 1,050 miles of road, led all the states. However, the railroads have kept pace with the marvelous growth of the industrial inter-

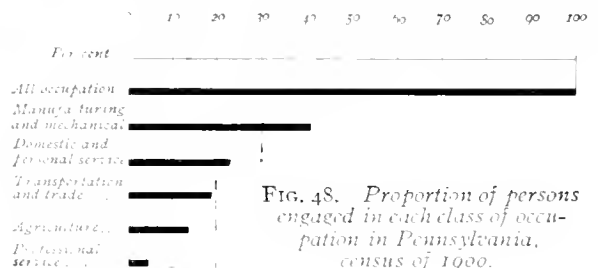


FIG. 48. Proportion of persons engaged in each class of occupation in Pennsylvania, census of 1900.

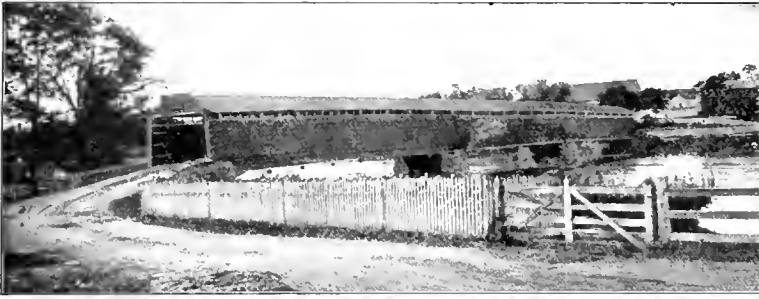


FIG. 49. One of the quaint old covered bridges over Conodoguinet Creek, Cumberland County. This bridge was completed in 1829.

August 8, 1829. The engineer who bore a part in this historic trip was Horatio Allen.

One of the most serious problems in the building of railroads is that of securing cross-ties. In Pennsylvania the railroads practically require 300,000,000 cubic feet of timber each year for cross-ties. To this end some of the large companies in the state have secured extensive tracts of land, and are planting thousands of trees.

Pennsylvania has 24.38 miles of track for every 100 square miles of area, or 16.37 miles of track for each 10,000 inhabitants.

The State Government. Pennsylvania is known as the Commonwealth of Pennsylvania. The present Constitution was adopted in 1874. The state is represented in Congress by two Senators and thirty-two Representatives. The state government is divided into three parts—the Executive, the Legislative, and the Judicial.

The Executive department consists of a Governor, Lieutenant-Governor, and Secretary of Internal Affairs, elected for a term of four

years, the Auditor-General for three years, and the State Treasurer for two years, the Secretary of the Commonwealth, the Attorney-General, and the Adjutant General, appointed by the Governor at pleasure, and the State Superintendent of Public Instruction, who is appointed for four years.

The Legislative or law-making power is vested in the State Legislature, which is composed of a Senate of fifty members elected for four years, and a House of Representatives of 204 members elected for two



FIG. 51. The State Capitol at Harrisburg.

years. The Legislature meets biennially at the Capitol (Fig. 51), on the first Tuesday of odd numbered years.

The Judicial department embraces a Su-

preme Court, consisting of seven judges elected by the people for twenty-one years. Annual sessions are held at Harrisburg, Sunbury, and Pittsburg. Other courts are a superior court, courts of common pleas,

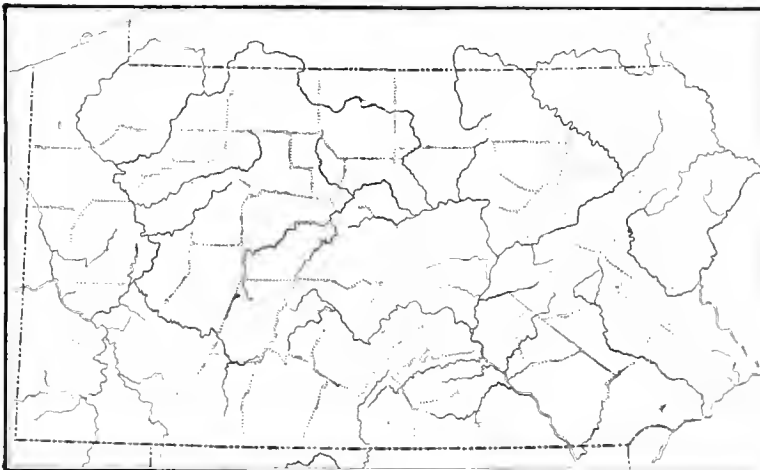


FIG. 50. The Congressional districts of Pennsylvania.

of oyer and terminer and general jail delivery, of quarter sessions of the peace, magistrates, and orphans' courts.

Pennsylvania is divided into sixty-seven counties varying greatly in area and population. These counties are divided into cities, boroughs, and townships, each having its own local officers. New counties may be formed only by legislative enactment, but any new county so formed must have at least 400 square miles of territory and not less than 20,000 inhabitants. The more important officers of the county are: commissioner, treasurer, sheriff, prothonotary, clerk of the court, district attorney, jury commissioner, director of the poor, and county superintendent of public schools.

State Charities and Penal Institutions. There are in the state many benevolent institutions for the education of the feeble-minded, the deaf, the dumb, and the blind. The schools for the deaf at Edgewood Park, Philadelphia, and Seranton are especially efficient. State industrial reform schools for boys are established at Morganza, Glen Mills, Huntingdon, and Philadelphia.

At Harrisburg, Danville, Warren, Wernersville, Norristown, and Allentown are state

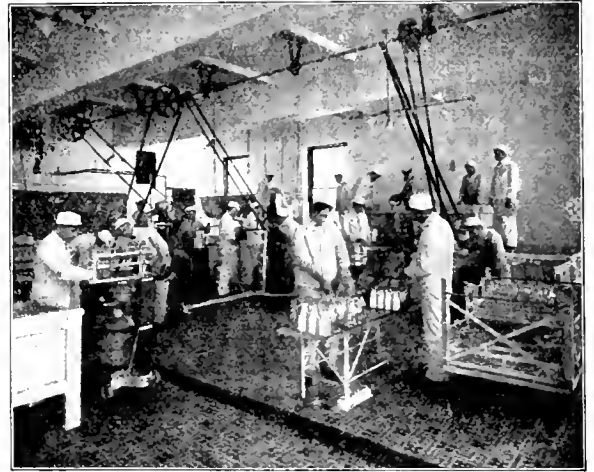


FIG. 51. A busy scene in the creamery at the State Agricultural College.

hospitals for the care of the insane; while at Philadelphia and Allegheny are state penitentiaries.

Education. In all departments of education Pennsylvania takes high rank. Her constitution requires that efficient public schools be maintained for the education of all children above the age of six years. The Free School Act dates only from 1834, yet to-day the total annual appropriation to the public school fund is practically \$6,000,000. This is by far the largest direct appropriation made by any state.

The public school system of the state is organized under a State Superintendent of Public Instruction, assisted by Directors elected by the people and for each county; a superintendent of public schools, is elected for a term of three years by these directors.

There were in the state in 1903, 1,702,340 children between the ages of five and eighteen, and of these 1,103,669 were enrolled in the public schools. The average daily attendance was 883,865. The total expenditure

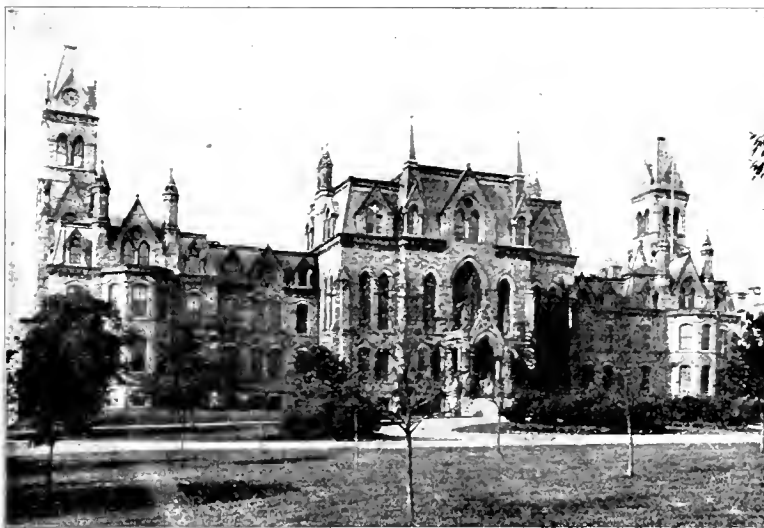


FIG. 52. College Hall, University of Pennsylvania.

for 1902-3 was more than \$24,000,000. In 1904 there were 630 public high schools and 144 private secondary schools. The average cost of schooling each child per month, for 1903, was \$2.04, and the total amount paid into the treasuries of the several school districts of the state was \$5,584,718.62. The total wages paid the teachers of the state in 1903 was \$12,552,491, or an average of \$399.16.

Pennsylvania is divided into thirteen State Normal School districts, each having its own school for the training of teachers. The State Agricultural College is at State College. It provides free tuition in agriculture and the mechanic arts to residents of Pennsylvania. (Fig. 53.) The University of Pennsylvania,

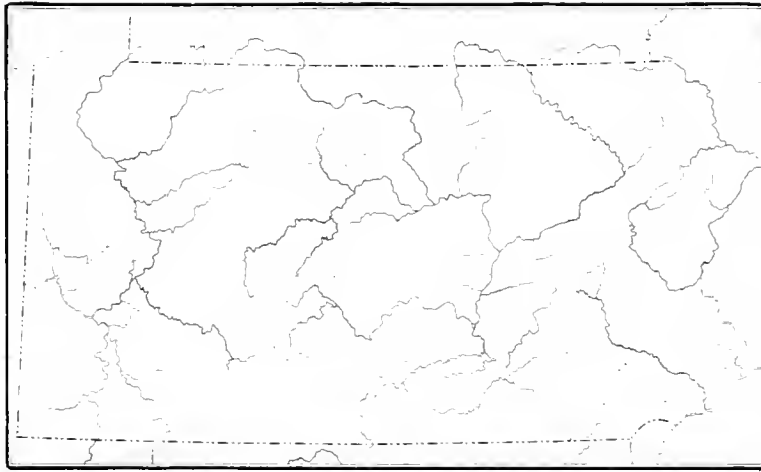


FIG. 54 The location of the leading educational institutions of Pennsylvania.

which is one of the leading educational institutions in the United States, is located in West Philadelphia. (Fig. 52.) Every department is thoroughly equipped for efficient work. At Pittsburg is the Western University of Pennsylvania. Founded at Pittsburg as the Pittsburg Academy in 1786, it is one of the oldest educational institutions west of the Appalachians. It has become widely known because of the work done at its astronomical observatory. Pennsylvania has, beside the state schools, about thirty schools classed as colleges and universities. (Fig. 54.) At Carlisle, Pa., is located the largest, best equipped, and most efficient school for the education of the Indian in the United States.

THE LEADING EDUCATIONAL INSTITUTIONS OF PENNSYLVANIA

COLLEGES AND UNIVERSITIES

- | | | |
|---|--|--|
| 1 Muhlenberg College, Luth., Allentown. | 19 Bucknell University, Bapt., Lewisburg. | 35 Waynesburg College, Cumberland Presb., |
| 2 Lebanon Valley College, Annville. | 20 Allegheny College, M. E., Meadville. | Waynesburg. |
| 3 St. Vincent College and Seminary, R. C., | 21 Albright College, Evang., Myerstown. | PUBLIC NORMAL SCHOOLS |
| Beatty. | 22 Westminster College, United Presb., New | 36 State Normal School (1), West Chester. |
| 4 Beaver College, M. E., Beaver. | Wilmington. | 37 State Normal School (2), Millersville. |
| 5 Geneva College, Ref. Presb., Beaver Falls. | 23 Central High School, Non-Sect., Phila- | 38 Keystone State Normal School (3), Kutztown. |
| 6 Moravian College and Seminary, Moravian, | delphia. | 39 East Stroudsburg State Normal School |
| Bethlehem. | 24 Girard College, Non-Sect., Philadelphia. | (4), East Stroudsburg. |
| 7 Bryn Mawr, Non-Sect., Bryn Mawr. | 25 La Salle College, R. C., Philadelphia. | 40 Mansfield State Normal School (5), Mans- |
| 8 Dickinson College, M. E., Carlisle. | 26 University of Pennsylvania, State, Phila- | field. |
| 9 Wilson College, Presb., Chambersburg. | delphia. | 41 State Normal School (6), Bloomsburg. |
| 10 Pennsylvania Military College, Non-Sect., | 27 Pennsylvania College, Non-Sect., Pittsburg. | 42 Cumberland Valley State Normal School |
| Chester. | 28 Western University of Pennsylvania, State, | (7), Shippensburg. |
| 11 Ursinus College, Reformed, Collegeville. | Pittsburg. | 43 Central State Normal School (8), Lock |
| 12 Lafayette College, Presb., Easton. | 29 Susquehanna University, Luth., Selins- | Haven. |
| 13 Pennsylvania College, Luth., Gettysburg. | grove. | 44 Indiana Normal School (9), Pennsylvania |
| 14 Thiel College, Luth., Greenville. | 30 Lehigh University, Non-Sect., South Bath- | (10), Indiana. |
| 15 Grove City College, Non-Sect., Grove City. | lehem. | 45 Southwestern State Normal School (11), |
| 16 Haverford College, Friends, Haverford. | 31 Pennsylvania State College, State, State | California. |
| 17 Juniata College, Ger. Bapt., Huntingdon. | College. | 46 Shippensburg State Normal School (12), |
| 18 Franklin and Marshall, Reformed, Lan- | 32 Swarthmore College, Friends, Swarthmore. | Shippensburg. |
| caster. | 33 Villa Nova College, R. C., Villa Nova. | 47 State Normal School (13), Elmhurst. |
| | 34 Washington and Jefferson, Presb., Wash- | 48 Clarion State Normal School (14), Clarion. |
| | ington. | |

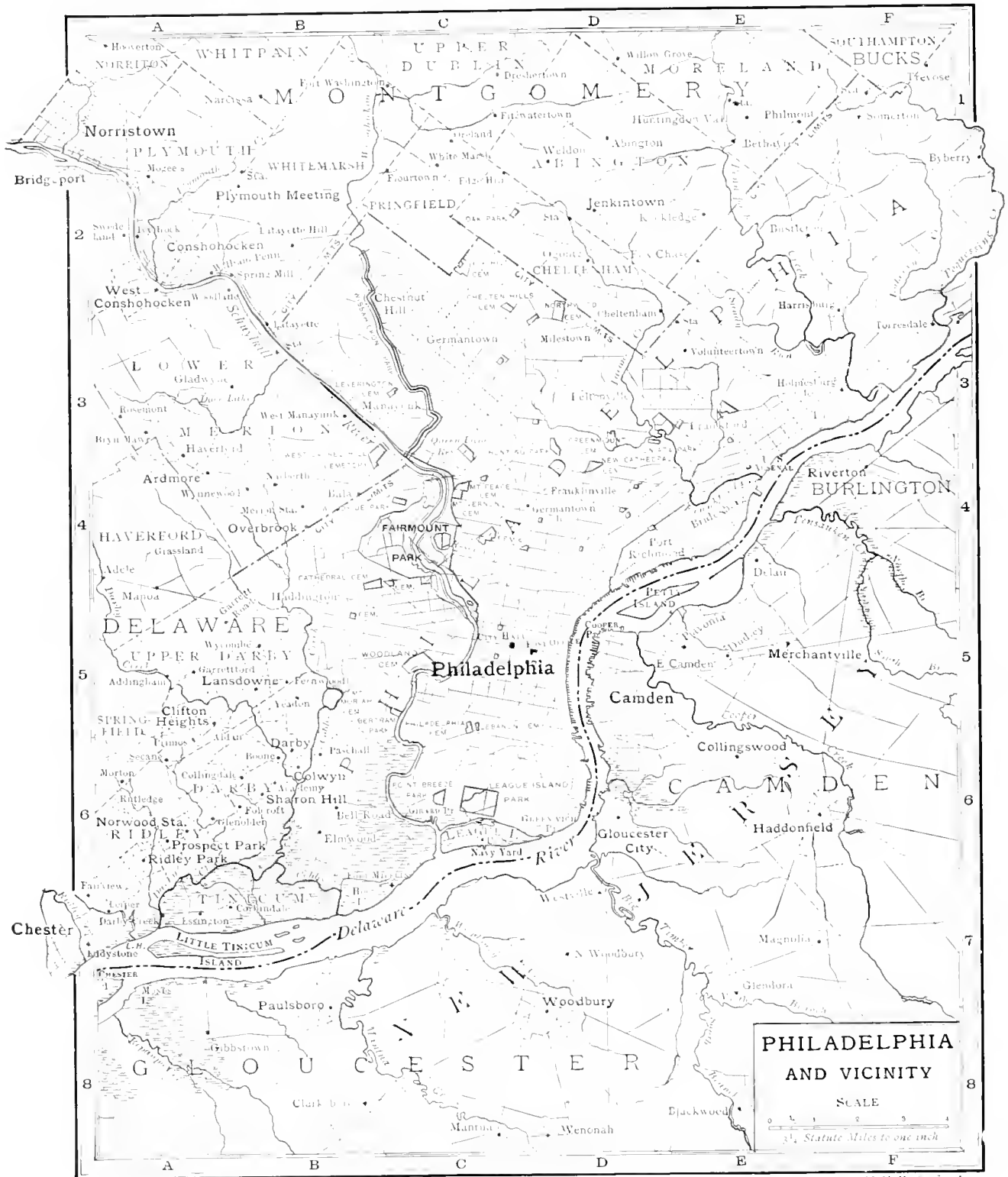


FIG. 55. Map of the City of Philadelphia. Copyright, 1906, by Rand, McNally & Company

II. THE GROWTH AND DEVELOPMENT OF CITIES.

In Pennsylvania, owing to the vast development of industrial and commercial activities, the population in cities and towns has far outstripped that in rural districts. Indeed, to-day more than two-thirds of the population of Pennsylvania is urban. There are in the state 931 incorporated places, and, by the census of 1910, the Commonwealth contains 7,665,111 inhabitants, 5,189,479 of whom live in these places. (Fig. 57.) In comparison, New York has 9,113,614 inhabitants, with 7,526,775 grouped in a total of 500 incorporated places, and Illinois, 5,638,591 inhabitants, 4,137,010 residing in 1063 incorporated cities and villages. Pennsylvania's density per square mile is 171 people, which is more than five times the number for the country, though five states, Rhode Island, Massachusetts, New Jersey, Connecticut, and New York, in the order named, exceed it in density. (Fig. 56.)

Philadelphia, because of its founder known as the "Quaker City," is now more often called the "City of Homes" because so many of its people own the homes they live in. It is the largest city in the state and the third in the country, only New York and Chicago outranking it.

Situated on the Delaware at the head of navigation for the largest ocean steamers, connected by navigable waterways with the great anthracite region, and the center of three great railway systems, it is naturally one of the greatest commercial, manufacturing, and financial centers of

the country. (Fig. 55.) Philadelphia is the leading manufacturing center of Pennsylvania, and the total power used exceeds that of any other city in the United States. It is the chief wool manufacturing center of the country and has the largest locomotive works in the world. About one-third of the wage-earners of the state are employed in Philadel-

phia works, which turn out products equaling in value nearly one-third that of the total for all the manufactories of the state. Foundry and machine shop products, the refining of sugar, molasses, and petroleum, and the making of carpets and rugs, and men's clothing lead in importance. Philadelphia is a great center for shipbuilding, holding first rank in this industry. At immense shipyards in the southern part of

the city have been built some of the best known of the great war vessels of the world. (Fig. 59.) Here also, on League Island, is one of the great navy yards of the United States.

A large part of Philadelphia's industrial importance is due to her favorable situation for

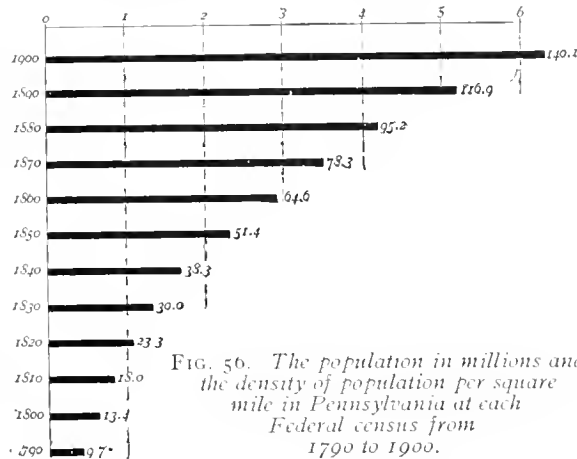
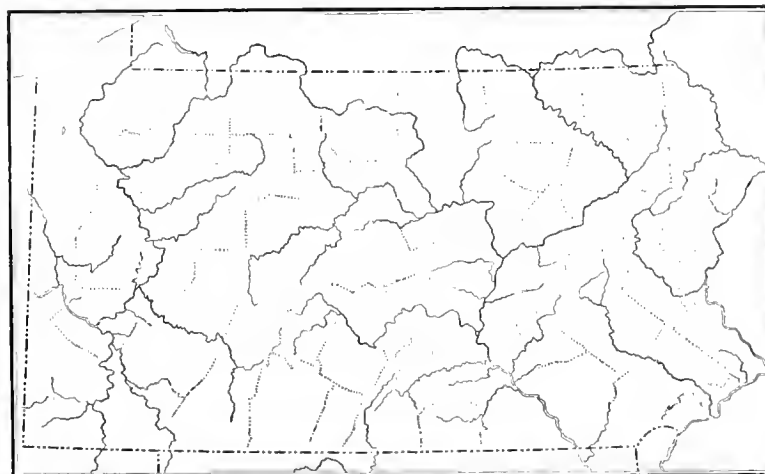


FIG. 56. The population in millions and the density of population per square mile in Pennsylvania at each Federal census from 1790 to 1900.



The relative size of incorporated cities and villages is shown by the size of the circles
 3,000 to 5,000 5,000 to 1,000,000 1,000,000
 The area and the relative population of Philadelphia

FIG. 57. The distribution of urban population in Pennsylvania, census of 1900.



FIG. 58. *Broad Street, Philadelphia, at the intersection of Market. Notice City Hall with its lofty tower, 520 feet high, surmounted by a statue of William Penn.*

commerce. The city, with about twenty miles of frontage on the Delaware, is crossed by the Schuylkill on its way to join that river, and the banks of both streams are fringed with miles of busy wharves. The great depth of water in the Delaware at the wharves affords splendid accommodation for shipping, and here may be seen great ocean steamers from many parts of the world. The city likewise owes much to its superior railroad facilities.

Philadelphia, however, is conspicuous not alone for its material advantages. It is famed for its colleges, schools, and libraries, for its honored place in science, in art, and in the learned professions. The great schools of Philadelphia are the University of Pennsylvania, founded by Benjamin Franklin, Girard College, endowed by Stephen Girard, Williams School, and Drexel Institute. Philadelphia has many other educational institutions of high rank, including medical and law colleges, schools of design and art, and conservatories of music and numerous

libraries. Among widely known scientific institutions are the Philadelphia Academy of Natural Sciences, famous for its noteworthy and interesting collections, the oldest institution of its kind in America; the Franklin Institute for the promotion of the Mechanic Arts; and the American Philosophical Society, which had for its first president Benjamin Franklin. (Fig. 19.)

The historical records of Philadelphia go back to the earliest annals of our country. Virtually the capital of the Colonies during the Revolution, it was the scene of many notable events connected with the stirring times of that period. Here was the greatest city of colonial days, the seat of the first Continental Congress, and the birthplace of the Declaration of Independence.

(Figs. 21, and 22), Designated as the seat of government for Pennsylvania, March 12, 1683, it remained the capital 110 years. The Philadelphia of those days comprised two and one-half square miles; to-day the city covers fully 130 square miles. It now has about 1,100 miles of

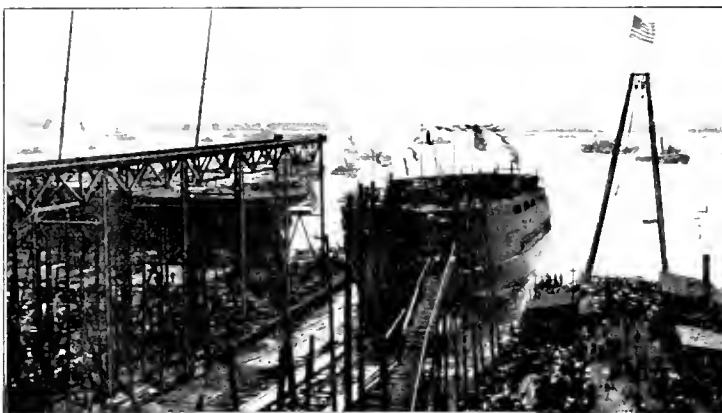


FIG. 59. *Launching of the battleship Maine at the great shipyard on the Delaware, Philadelphia. With the exception of the Clyde River, Scotland, more shipping is built on the Delaware than on any other river in the world.*



FIG. 60. *The Broad Street railroad station, Philadelphia. A fine example of modern Greek architecture.*

finely paved streets, enough, if in a continuous line, to reach from the Centennial Building of 1876 to the St. Louis Exposition of 1904. Broad Street is one of the longest and finest thoroughfares in the world. (Figs. 58 and 60.) At its intersection with High, now Market Street, stands the City Hall, a marble building completed after three decades of labor, at a cost of \$25,000,000.

The public parks of the city cover a large area, Fairmount Park, the most celebrated, embracing more than 3,000 acres. This park, justly famed for the beauty and loveliness of its natural scenery, is adorned by many fine works of art, notable among these being the imposing statue of Washington, by Siemering, erected in 1896.

Here, too, are found a number of houses of historic interest, the estates to which they belonged now forming parts of certain sections of the park. Here may be seen the home of Robert Morris, the financier of the Revolution, and of his friend, the eminent patriot

Richard Peters, as well as the quaint old house in which David Rittenhouse, the famous astronomer, was born.

Pittsburg, the county seat of Allegheny County, is the second city in the state and the first in importance in western Pennsylvania. Situated at the forks of the Ohio, formed by the union of the Allegheny and Monongahela rivers, it is 275 miles west from the city of New York, 350 miles from Cincinnati, and 450 miles east from Chicago. It stands, indeed, as a great "tollgate" on the highway of the United States between the East and the West.

Its industrial interests are preëminent, growing out of unrivaled transportation by river

and rail and its proximity to vast deposits of coal, petroleum, and natural gas. Like a great converter, Pittsburg takes the ore, the crude oil, the cotton, the glass-sand, and other raw materials from field, forest, and mine and changes them into commercial commodities of great value. Over the waterways and railroads leading in and out of this busy district passes annually a tonnage of freight twice as great as that of any other city. Sixteen railroads center here and more than 8,000 loaded freight cars enter or depart from Pittsburg daily, while the river craft of the city exceed in tonnage and capacity that of the vessels of any seaport or lake harbor of the United States.

(Figs. 61 and 63.)

Pittsburg is the greatest iron and steel producing center in the United States. Its other leading manufactures are foundry and machine shop products, electrical apparatus and supplies, architectural and ornamental iron work, iron and steel pipe, and glass.

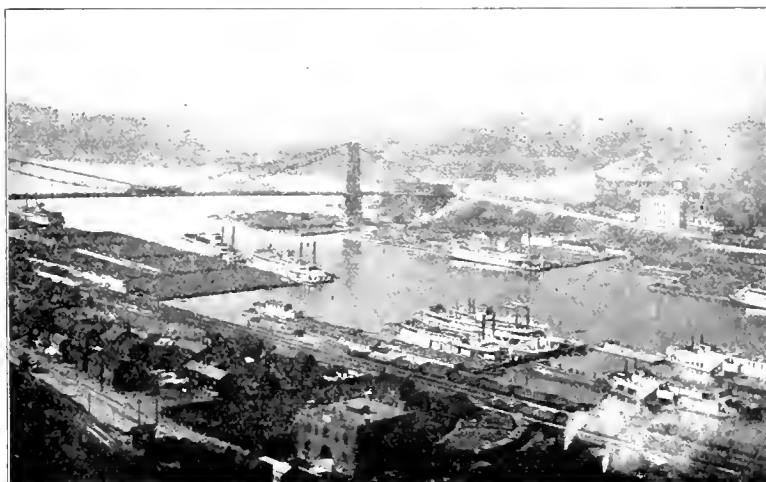


FIG. 61. *The Monongahela River as seen from the wharf at Pittsburg. This stream flows through a fine valley rich in deposits of coal, its banks are lined with coal tipples, and innumerable barges laden with coal throng its waters*

From a village of 1,500 inhabitants in 1800 Pittsburg had become by 1900 one of the greatest industrial cities in the world, with a population exceeding 300,000. Sharing the excellent natural advantages that have been the source of Pittsburg's prosperity are many populous manufacturing centers that have sprung up all along the rivers near the city; the marvelous development of the Pittsburg district being without a parallel in the industrial world. In 1906 an act was passed providing for the annexation of Allegheny and other near-by suburban places to Pittsburg. This was approved by the people, and the law went into effect in 1907.

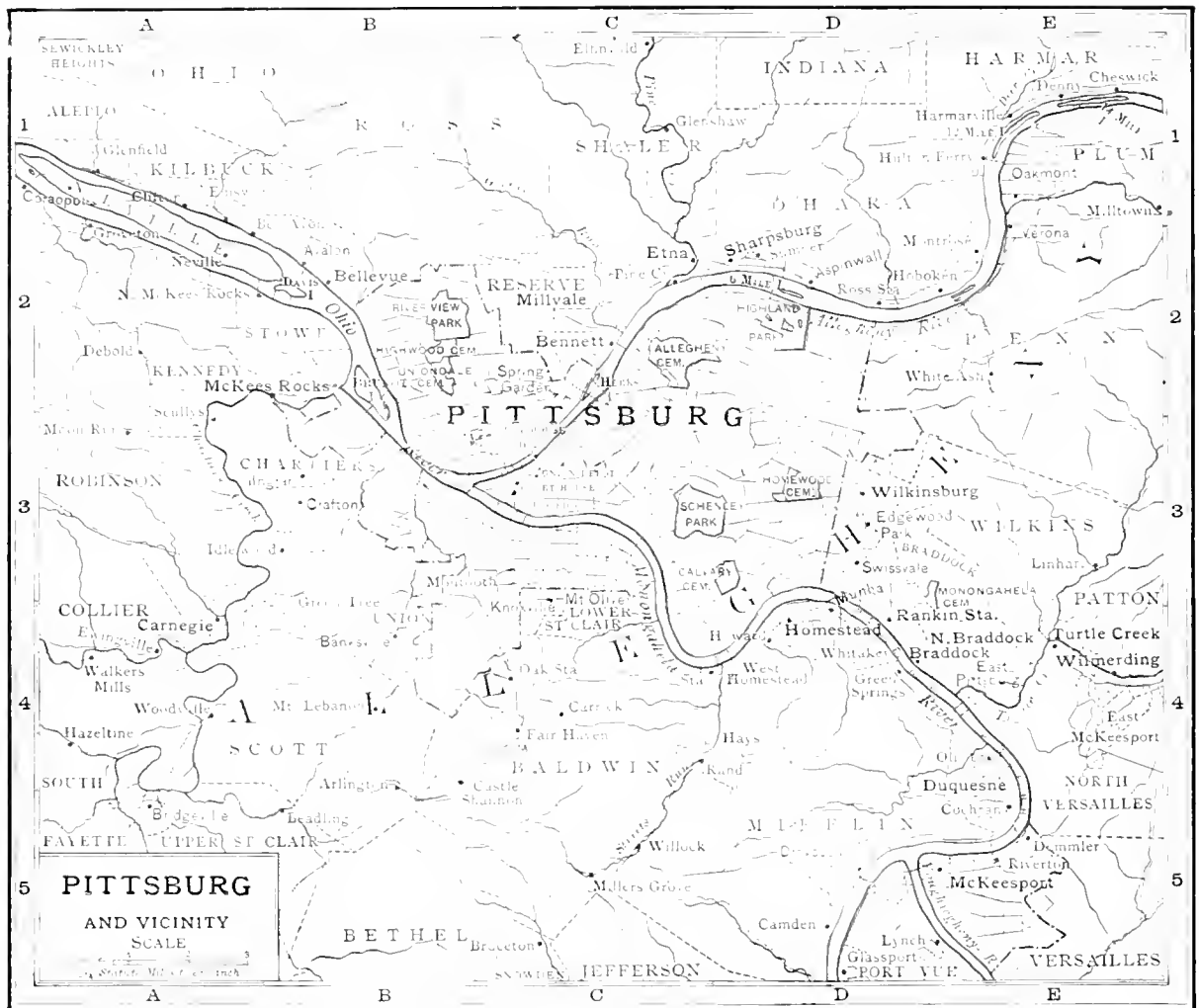


FIG. 62. Map of Pittsburgh and vicinity.

Allegheny was then the third city in the state. Separated from Pittsburgh only by the Allegheny River, it always had the same reasons for growth which had made Pittsburgh. Growing skill in road and bridge building soon made the river less and less a real separation. Great industrial establishments grew up on either side of the three rivers about Pittsburgh, and numerous bridges had long made the whole region one great commercial and industrial community in fact, as the law now made them one in name. The Allegheny Observatory, the Western University of Pennsylvania, and the several theological schools became Pittsburgh institutions, while the added population gave the city its

real rank among the large cities of the world. (Fig. 62.)

Scranton, the county seat of Lackawanna County, is fourth in size among the cities of Pennsylvania. It has an area of about twenty-five miles, is finely located, and surrounded by beautiful scenery. Lying in the heart of the upper measures of the anthracite region, it is a natural distributing point and has become a great railroad center.

The rapid growth of the city is due primarily to the mining of coal. The abundance of fuel invited manufactures, and many flourishing industries now contribute to the city's commercial and financial interests. Fully \$30,000,000 is em-

ployed in these industries, chief of which, aside from coal mining, are the manufacturing of iron and steel, lace, silk and silk goods, knit goods, and of all kinds of foundry and machine shop products from locomotives to nuts and bolts.

Reading, the county seat of Berks County, is picturesquely situated on the Schuylkill where the river has cut its way through the South Mountain. Located in a rich agricultural district, and near vast stores of anthracite and iron ore, Reading early became a great manufacturing center. Its iron and steel interests are extensive, and its railroads noteworthy. Its manufactories include rolling mills, sheet iron, boiler plate, car, tube, and carriage-wheel works. Other industries are the making of fur hats, woolen, cotton, and silk goods. Mount Penn and Neversink Mountains, near the city, afford magnificent views of the Schuylkill and Lebanon valleys and are attractive summer resorts much frequented by health and pleasure seekers.

Erie, the county seat of Erie County, on Lake Erie, has one of the best harbors on the Great Lakes. (Fig. 64.) It is protected for six miles by the peninsula of Presque Isle, and the city has an extensive lake trade. It also has numerous railroads. It is a receiving point for iron and copper from the Lake Superior region and



FIG. 63. A view of Pittsburgh along the Monongahela River frontage.

gas in the vicinity, it is greatly favored for commercial and industrial growth. Among its industrial works are tanneries, chemical works, planing and flouring mills, manufactories for pianos and organs, engines and boilers. The city, laid out in 1795, stands on the site of the old French fort, Presque Isle, built in 1753. It was the headquarters of Commodore Perry, and from here he sailed to defeat the British in the battle of Lake Erie in 1813.

Wilkes-Barre, the county seat of Luzerne County, is situated on the Susquehanna in the beautiful Valley of Wyoming, a region of unusual attractiveness. Near the city are many reminders of Colonial and Revolutionary periods, including the Wyoming Monument (Fig. 65), marking the site of the conflict of July 3, 1778, the Old Forty Fort Church erected in

1808, and Queen Esther's Park. Wilkes-Barre is the chief industrial and trade center of the most productive anthracite field in the world. Its industries, widely diversified, include the making of mining machinery, cutlery, silk, and lace. The city, founded in 1769, was named in

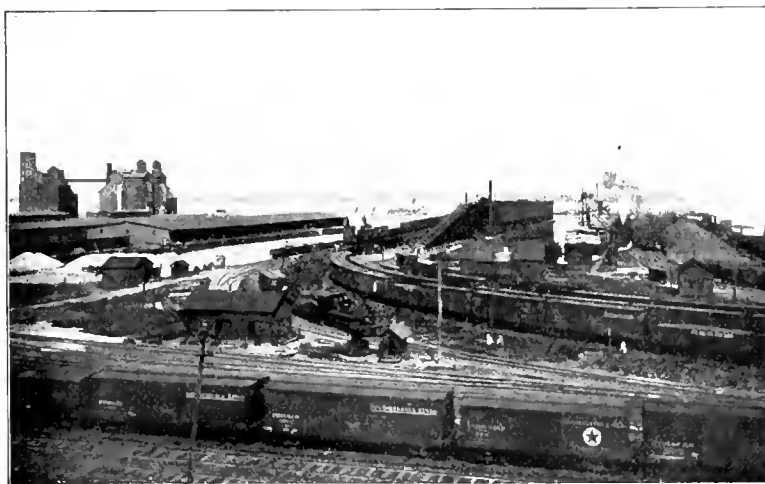


FIG. 64. A view of the harbor and ore docks at Erie. Owing to the advantages of its situation and its fine harbor, the port of Erie plays a most important part in the shipping of the Great Lakes.

honor of John Wilkes and Colonel Isaac Barre, stirring advocates for the Colonists in the British Parliament.

Harrisburg, the capital of Pennsylvania and the county seat of Dauphin County, is beautifully situated on the east bank of the Susquehanna 105 miles northwest of Philadelphia. The river, which, a short distance north, breaks through the Blue Mountains, is here a mile wide and is spanned by five fine bridges. The city, surrounded by a good agricultural district, is an important railroad center and the seat of many flourishing industries. Its manufactories include iron and steel works and machine shops. The capitol buildings are in a beautiful park of about sixteen acres. (Fig. 51.) Here the legislature meets every two years and here are the Supreme Court and other departments of the state government. The State Library, founded 1790, contains over 100,000 volumes.

Lancaster, the county seat of Lancaster County, sixty-eight miles west of Philadelphia, is situated in one of the most productive agricultural districts of the United States. Tobacco growing is a flourishing industry in the surrounding country, and the city has an extensive trade in this article. Two railroads afford ample facilities for trade. Among its industrial interests are foundries, cotton mills, and tanneries. Lancaster is the seat of Franklin and Marshall College, and four miles distant, connected by trolley, is Millersville, the seat of the first State Normal School for Pennsylvania. From 1709 to 1812 Lancaster was the capital of the state. This city was the home of James Buchanan and Thaddeus Stevens.



FIG. 65. Wyoming Monument, marking the site of the massacre of 1778.

Altoona, at the eastern base of the Allegheny Mountains, 117 miles east of Pittsburgh, is the largest city of Blair County. The city founded in 1850 by the Pennsylvania Company is a typical railroad town. It is situated on the main line of the road and its industrial interests are largely identified with those of the company. It is the home of thousands of men employed in the immense shops of the railroad. Large silk mills are located here. Just west of the city is the famous "Horseshoe Curve." (Fig. 67.)

Johnstown, Cambria County, seventy-six miles east of Pittsburgh, lies at an altitude of about 1,200 feet in a narrow, irregular valley formed by the confluence of Stony Creek and the Conemaugh River. In 1889, as a result of heavy rains, a dam twelve miles west of the city, broke, releasing Conemaugh Lake and causing the great "Johnstown Flood." The city was nearly destroyed and several thousand citizens were drowned. Having good railroad facilities and large deposits of coal the city rapidly recovered from the disaster and is to-day one of the most prosperous industrial centers in the state. Its interests center chiefly in iron and steel.

Allentown, the county seat of Lehigh County, is situated on the Lehigh River. It is an important railroad center, near the great slate and cement district. Allentown has large manufactories for iron, steel, cement, thread, silk, (Fig. 66) and furniture. Trolley lines connect it with Philadelphia on the south, Slatington, Nazareth, Bangor, and Easton north and east. It is the seat of Muhlenberg College (Lutheran), and of Allentown College for women.

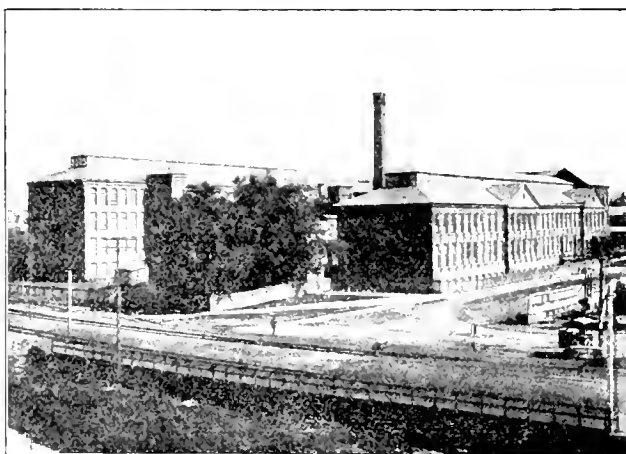


FIG. 66. Silk mills at Allentown. In America only Paterson, N. J., rivals Allentown in the production of silks.

McKeesport, on the east bank of the Monongahela River at the mouth of the Youghiogheny, is fifteen miles southeast of Pittsburgh. Situated in the great natural gas and bituminous coal district, with abundant water power and excellent transportation, both by river and rail, it has become the seat of large and important industries. Coal mining and the manufacture of iron and steel lead in importance.

Chester, the oldest town in Pennsylvania, is on the Delaware River fourteen miles southeast of Philadelphia. With excellent railroad facilities, an extensive river front, and abundance of fuel close at hand, it has had a rapid industrial development. It is especially noted for its ship-building and steel casting. Chester is the seat of the Pennsylvania Military College, and at Upland, just without the city is Crozer Theological Seminary. Of historic interest are the City Hall, and the old Pusey house, frequently visited by William Penn. (Fig. 67.)

York, the county seat of York County, ninety-four miles west of Philadelphia, is situated in a farming region of great fertility.



FIG. 67. *The City Hall—old Court House—at Chester, built 1724*

It is an important industrial center having extensive manufactures. Foundry and machine shop products, tobacco, cigars and cigarettes, paper hangings, iron and steel lead in importance. In 1777-1778, the Continental Congress, driven from Philadelphia by the approach of Howe's army, met here.

Williamsport, the county seat of Lycoming County, is finely situated on the West Branch of the Susquehanna. Lying at an elevation of more than 500 feet, it is one of the most healthful cities of the Union. The tributary country is rich in grain, timber, and minerals, and flourishing and widely diversified industries naturally result. It is at the junction of three railroad lines and is the greatest industrial and chief commercial center of northern Pennsylvania.

Newcastle, the county seat of Lawrence County, has had a phenomenal growth in recent years. It is the trade center of a fine agricultural region, rich in deposits of coal, glass-sand, clay, limestone, and sandstone. Its industries include a large tin plate mill and two glass factories.

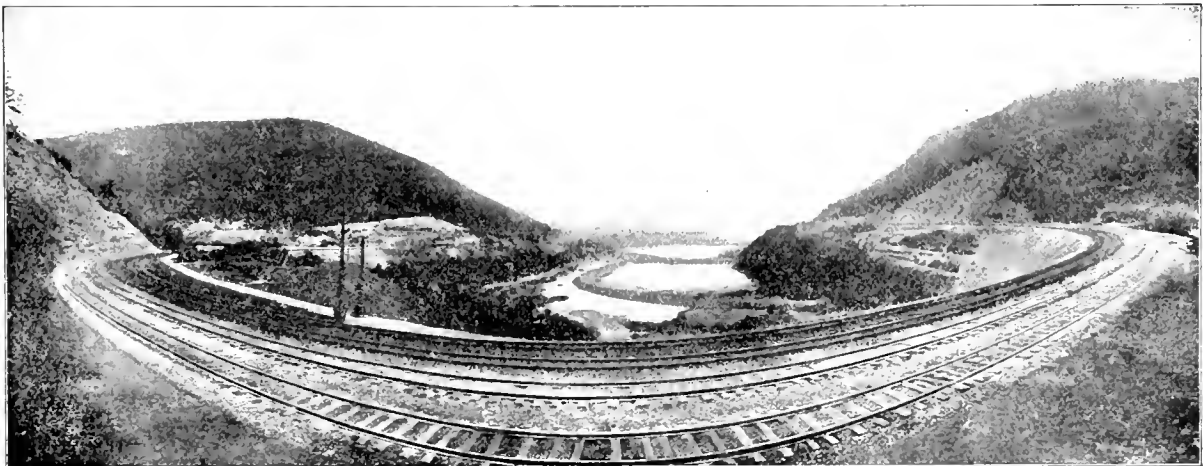


FIG. 68. *The great Horseshoe Curve near Altoona. This famous railroad curve lies in the Allegheny Mountains near the divide of the Atlantic and Mississippi at an elevation of about 1,600 feet.*

Easton, the county seat of Northampton County, at the confluence of the Delaware and Lehigh rivers, is the center of five railroads. It lies near great deposits of cement rock, slate, and coal, and has manufactures of mining machinery, railroad supplies, organs, silk, hosiery, rope, and twine. Here is the seat of Lafayette College.

Norristown, the county seat of Montgomery County, is on the Schuylkill, seventeen miles northwest of Philadelphia. With unequaled railroad facilities and a tributary country rich in iron, limestone, and marble, it has become the seat of various flourishing industries. Among these are iron and steel works, woolen and flouring mills, hosiery and knit goods, factories, foundries and machine shops. Six miles distant is historic Valley Forge. (Figs. 20 and 72.)

Shenandoah, Schuylkill County, owes its prosperity to its situation in the Schuylkill coal region, one of the richest of the great anthracite fields. (Fig. 31.) It has good railroad facilities and a vast trade in coal. Abundant fuel has resulted in various manufactures.

Shamokin, in Northumberland County is situated in a rich anthracite district at the junction of three railroads. Coal mining and manufactories for knit goods, shirts, silks, stockings, and brick are the chief industries.

Lebanon, the county seat of Lebanon County, is within four miles of the Cornwall Iron Mines, and adjacent to abundant supplies of limestone, sandstone, and brick clay. Here mining, quarrying, and the manufacture of brick, iron, steel, and textiles are the chief activities.

Pottsville, the county seat of Schuylkill County, is on the Schuylkill River in a region noted for its beauty. It lies in the center of

the anthracite fields in the Schuylkill basin and has a large trade in coal. Here are coal mines, steel works, and railroad shops. (Fig. 69.)

Braddock, Allegheny County, is on the Monongahela River ten miles east of Pittsburgh. It has extensive manufactures of steel, wire, pig iron, steel rails, cement, and plaster. It is on the site of Braddock's defeat, 1756.

Bradford, McKean County, is in the petroleum and gas region. Its manufacturing industries include oil well machinery, gas-engine, glass, terra-cotta and cutlery works, oil well refineries, and lumber mills. The great Kinzua Bridge, 300 feet high and 2,100 feet long, is near the city.

Hazleton, Luzerne County, 114 miles northwest of Philadelphia, is beautifully situated at an elevation of 1,624 feet. It lies in the Lehigh basin of the anthracite region and is extensively engaged in mining and manufacturing.

Pottstown is a flourishing industrial center in Montgomery County. It has rolling mills, bridge works, furnaces, nail works, and foundries. Here is the celebrated Hill School.

Plymouth, Luzerne County, on the Susquehanna, was the first

settlement in the Wyoming Valley. It lies in the great anthracite field and from Plymouth to points along the Susquehanna went the first shipments of coal from this now widely known locality. With East Plymouth it forms a large and busy mining and industrial community.

Carbondale, Lackawanna County, is situated on the Lackawanna River at the junction of three railroads. Situated in the great anthracite region immense quantities of coal are mined and shipped. It is the seat of flourishing manufactories and of railroad repair shops and machine works.



FIG. 69. *Pottsville, a flourishing mining and industrial town in the Schuylkill Valley.*

Mahanoy City, Schuylkill County, is in the valley of the Broad Mountain and in the southern basin of the anthracite coal fields. Coal mining is the chief industry, but abundant fuel and good shipping facilities have favored manufactures which include iron, stationary engines, flour, and hosiery.

Oil City, Venango County, on the Allegheny River in the center of the great petroleum fields of western Pennsylvania, is the great trade center for the oil region. It has oil refineries, manufactures of oil well supplies, tubing, boilers, and other flourishing industries.

South Bethlehem, Northampton County, on the Lehigh River, is the seat of vast iron and steel industries. Here is Lehigh University (Fig. 71) and a well known school for girls.

Mt. Carmel, Northumberland County, 138 miles north of Philadelphia, is in the Schuylkill coal region. Coal is mined and shipped, and there are flourishing manufactures of mining machinery and miners' supplies.

Pittston, Luzerne County, is on the Susquehanna (Fig. 70) at its confluence with the Lackawanna. It lies in the Wyoming Valley in the heart of the anthracite region. Coal is mined extensively, and excellent railroad facilities with cheap fuel have resulted in various manufactures.

Homestead, Allegheny County, on the Monongahela River, has the largest steel plant in the



FIG. 70. Along the Susquehanna River where it breaks through the mountains near Pittston, one of the chief cities on this stream.

Union. It employs more than 6,000 men. In 1892 Homestead was the scene of one of the greatest strikes that has occurred in the history of organized labor.

Columbia, Lancaster County, on the Susquehanna River, in a region of great fertility, is a busy trade and shipping center. Among varied industrial interests it has iron furnaces, rolling mills, and manufactures of machinery. The river here, a mile wide, is spanned by one of the longest bridges in the United States.

Nanticoke, Luzerne County, is on the North Branch of the Susquehanna River, in the famous Wyoming Valley. Lying in the midst of immense coal fields, the leading industry is the mining and shipping of coal.

Steeltown, Dauphin County, is on the Susquehanna River, about three miles east of Harrisburg. Great steel works located here extend for nearly five miles in an almost continuous stretch of furnaces, forges, and rolling mills.

Wilkesburg, Allegheny County, is an attractive residence town adjacent to Pittsburgh. Its business interests are largely mercantile.

Butler, the county seat of Butler County, lies in a district rich in oil, gas, and coal. Excellent shipping facilities and abundant fuel favor industrial growth. Glass manufactures, including the making of bottle and plate glass, and steel car works, are the chief industries.

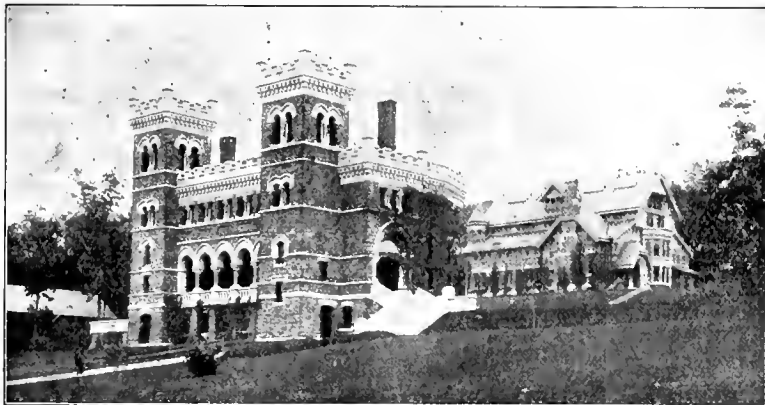


FIG. 71. The Library and Gymnasium buildings, Lehigh University, at South Bethlehem.

Meadville, Crawford County, on French Creek, is an important market and manufacturing center of western Pennsylvania. It lies in a fertile agricultural region and has a good trade in lumber, dairy products and grain. Here are large machine shops and railroad car works.

Beaver Falls, Beaver County, is on the Beaver River at the intersection of two railroads. Coal and natural gas abound in the vicinity, and Beaver Falls has become an important manufacturing center with extensive steel, pottery, glass, cork, chemical, and bridge works, rolling, planing, and tube mills, and other works. Geneva College is located at College Hill, a suburb.

Sunbury, the county seat of Northumberland County, on the Susquehanna River, is an important railroad and industrial center. It has flouring, planing, and silk mills, casket works, a foundry, and machine and railroad shops. Within the borough limits is Fort Augusta, erected in 1756.

Carlisle, the county seat of Cumberland County, is in the fertile Cumberland Valley. Its industrial establishments include machine shops and shoe and paper-box factories. Important historic events connected with the Revolution and the Civil War center about this city. The Indian Industrial School, occupying the Revolutionary "Barracks," in both industrial and academic lines, is considered the best in the United States. Here also is Dickinson College.

West Chester, the county seat of Chester County, is in a farming section of unrivaled fertility and has various agricultural implement works. It is the seat of the State Normal School of the First District. The old Turk's Head Hotel here dates from pre-Revolutionary times.

Dubois, Clearfield County, is a busy industrial center near productive coal mines. Its principal

industrial interests are centered in coal mining and the manufacture of lumber.

Phoenixville, Chester County, at the junction of French Creek and the Schuylkill River, is a manufacturing and distributing center. Around it have grown up great iron and boiler works, notable bridge works, silk, underwear, and hosiery mills.

Duquesne, Allegheny County, is situated on the Monongahela River twelve miles south of Pittsburgh. The industries of the town center chiefly in the great steel works and blast furnaces located here.

Sharon, Mercer County, is on the Shenango River seventy-five miles northwest of Pittsburgh.

Excellent transportation and abundant supplies of cheap fuel near by have resulted in varied manufactures. The steel and iron industries are important. The manufactures include boilers, nails, spokes, chains, stoves, tin plate, pig-iron, steel plate, and ordnance supplies.

Chambersburg, the county seat of Franklin County, is pleasantly situated on the Conococheague Creek in the beautiful and fertile

Cumberland Valley. Its manufactures include milling machinery, engines and boilers, shoes, hosiery, flour, furniture, gloves, and paper. Large railroad shops are located here.

Titusville, Crawford County, on Oil Creek, eighteen miles north of Oil City, lies in the great petroleum region and is actively engaged in refining and shipping oil. Local conditions encouraged manufacturing, and here are iron, radiator and cutlery works, engine, boiler and steel works, silk, saw, and planing mills.

Warren, the county seat of Warren County, is a rapidly growing industrial town on the north bank of the Allegheny River at the mouth of the Conewango. It has good railroad facilities, lies in a region rich in oil and natural gas, and

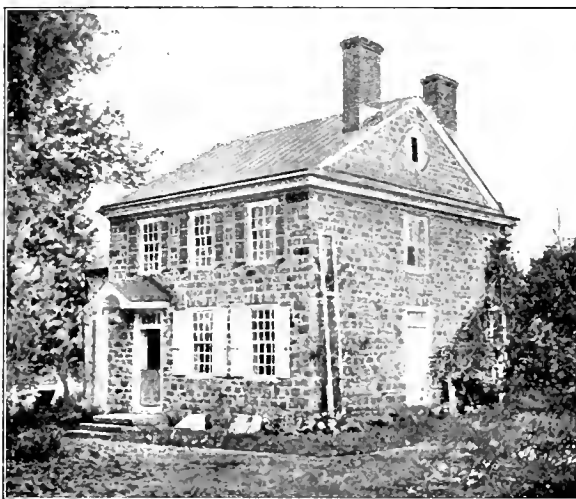


FIG. 72. Washington's headquarters at Valley Forge.

is the seat of seven large oil refineries and eight iron and steel works. At Warren is a state hospital for the insane.

Danville, the county seat of Montour County, is on the North Branch of the Susquehanna River, at the foot of Montour Ridge. Here was built the first plant for the manufacture of railroad iron in Pennsylvania. There are also stove works and several rolling mills. A State Insane Asylum is located here.

Washington, the county seat of Washington County, is in the center of a highly productive oil and coal region and is the seat of varied manufactures. Here is located Washington and Jefferson College.

Uniontown, the county seat of Fayette County, is at the junction of two railroads. The surrounding country is rich in coal, and large and varied industries have grown up here.

Carnegie, Allegheny County, is picturesquely located in the Chartiers Valley in a region underlaid with coal. Extensive manufactures, including the production of iron, steel, lead, and glass, are centered at Carnegie. Coal is mined and shipped.

Franklin, the county seat of Venango County, beautifully located on the Allegheny River at the mouth of French Creek, owes its prosperity largely to its situation in the oil region and to its excellent railroad facilities. It has extensive oil refineries and various manufactures. Franklin occupies the site of Ft. Venango, built by the French in 1753.

Bethlehem, Northampton County, is a great and growing industrial center on the Lehigh River, fifty-six miles north of Philadelphia. It has large steel, zinc, and graphite works, and

silk and knitting mills. Here are made some of the largest guns in the world. Armor plate is also made in the Bethlehem mills by the Krupp process. Bethlehem was founded by the Moravians in 1742. In 1777 and 1778 the general hospital of the Continental Army was here, and here were buried 500 soldiers of the army.

Tamaqua, Schuylkill County, lies on the Little Schuylkill River at the junction of two railroads. It has extensive coal mining interests and manufactures of foundry and machine shop products, stoves, powder, flour, shoes, furniture, knit goods, and beer.

Lock Haven, the county seat of Clinton County, is in a good agricultural and lumbering

district twenty-eight miles southwest of Williamsport. It has excellent transportation facilities and is a flourishing trade center. It exports pine lumber and has large pulp and paper mills, tanneries, and furniture factories. The State Normal School of the Eighth Dis-



FIG. 73. An interesting scene at Connellsville, the center of the Coke Industry. Here may be seen the coke ovens, the way the coal is carried to the ovens, and the coke being loaded on cars for transportation.

trict is located at Lock Haven.

Connellsville, Fayette County, on the Youghiogheny River, in the coal country, southeast of Pittsburgh is the center of the greatest coke manufacturing region in the world. (Fig. 73.) The industry employs nearly \$15,000,000 and engages about 8,000 people. Its industries include a machine shop, and tin plate and automobile works.

Bristol, a thriving manufacturing town in Bucks County, is situated on the Delaware. Machine shops, rolling and worsted mills, and manufactories for hosiery, carpets, and paper hangings are among its industrial interests. It was a station of the Federal army during the Revolution. Near by is a noted mineral spring.

The Counties of Pennsylvania.

COUNTY	OR- GAN- IZED	LAND AREA SQ. M.	POP- ULATION 1910	COUNTY SEAT	POP- ULATION 1910
Adams	1800	537	34,319	Gettysburg	4,030
Allegheny	1788	758	1,018,403	Pittsburgh	533,025
Armstrong	1800	647	67,880	Kittanning	4,311
Beaver	1800	429	78,353	Burrton	3,450
Bedford	1771	1,079	38,579	Bedford	2,235
Berks	1752	874	18,222	Reading	99,071
Blair	1810	530	108,858	Hollidaysburg	3,734
Bradford	1810	1,142	54,526	Towanda	4,281
Bucks	1682	629	79,430	Doylstown	4,304
Butler	1800	765	72,680	Butler	20,728
Cambridge	1804	680	166,131	Ebensburg	1,978
Cameron	1800	375	7,044	Emporium	2,910
Carlisle	1843	490	52,840	Mauch Chunk	3,952
Center	1800	1,130	43,424	Bellefonte	4,145
Chester	1682	760	109,213	West Chester	11,767
Clarion	1819	560	36,653	Clarion	2,612
Clearfield	1804	1,141	93,768	Clearfield	6,851
Clinton	1819	892	31,545	Lock Haven	7,772
Columbia	1813	480	48,497	Bloomsburg	7,413
Crawford	1800	1,020	91,595	Meadville	12,780
Cumberland	1759	530	54,479	Carlisle	10,303
Dauphin	1785	514	136,152	Harrisburg	94,180
Delaware	1789	178	117,090	Media	3,562
Elk	1843	760	35,871	Ridgeway	5,498
Erie	1800	782	115,517	Erie	69,525
Fayette	1783	824	107,449	Uniontown	13,344
Forest	1848	420	9,435	Tomesta	803
Franklin	1784	731	59,773	Chambersburg	11,800
Fulton	1850	416	9,793	McConnellsburg	570
Greene	1769	588	28,882	Waynesburg	7,190
Huntingdon	1787	940	38,394	Huntingdon	6,861
Indiana	1803	820	66,210	Indiana	5,740
Jefferson	1804	620	63,000	Brookville	3,003
Juniata	1831	368	15,013	Milltown	954
Lackawanna	1878	470	256,570	Scranton	129,867
Lancaster	1729	990	107,026	Lancaster	47,227
Lawrence	1849	400	70,422	Newcastle	39,280
Lebanon	1813	370	59,595	Lebanon	10,240
Lehigh	1812	328	118,832	Allentown	51,913
Luzerne	1786	910	34,816	Wilkes-Barre	67,195
Lycoming	1795	1,240	80,813	Williamsport	31,800
McKean	1804	676	47,808	Smethport	1,817
Mercer	1800	680	77,609	Mercer	2,023
Mifflin	1789	411	27,785	Lewistown	8,166
Monroe	1836	630	22,941	Stroudsburg	4,379
Montgomery	1784	501	169,596	Norristown	27,775
Montour	1850	142	14,868	Danville	7,517
Northampton	1752	370	127,667	Easton	28,523
Northumberland	1772	469	111,420	Sunbury	13,772
Perry	1820	561	24,136	New Bloomfield	772
Philadelphia	1682	130	1,549,008	Philadelphia	1,549,008
Pike	1814	620	8,033	Milford	872
Potter	1804	1,040	29,720	Coudersport	3,100
Schuylkill	1811	780	207,804	Pottsville	20,240
Snyder	1855	520	16,800	Middleburg	531
Somerset	1795	1,240	67,717	Somerset	2,612
Sullivan	1847	479	11,293	Laporte	245
Susquehanna	1810	823	37,740	Montrose	1,914
Tioga	1804	1,180	42,829	Wellsville	3,183
Union	1813	316	16,249	Lewisburg	3,951
Venango	1800	671	59,359	Franklin	9,767
Warren	1800	860	39,593	Warren	11,086
Washington	1781	830	143,686	Washington	18,778
Wayne	1798	834	29,236	Honesdale	2,045
Westmoreland	1773	1,090	231,324	Greensburg	13,012
Wyoming	1842	459	15,529	Tunkhannock	1,508
York	1749	875	146,495	York	44,750

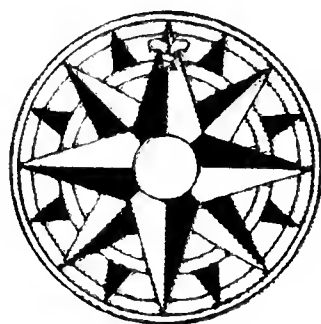
*Estimated 1910

The Average Annual Precipitation Recorded at Twelve Principal Stations in Pennsylvania for Periods of from Seventeen to Eighty-five Years.

STATIONS	LATI- TITUDE	LONGI- TITUDE	ELEVA- TION, FEET	RECORD YEARS	INCHES
Altoona	40°43'	78°24'	1,182	1850-1901	33.44
Bethlehem	40°36'	75°52'	237	1877-1901	41.29
Carlisle	40°15'	77°14'	485	1839-1901	41.84
Confluence	40°55'	79°26'	1,324	1874-1901	41.25
Emporium	41°35'	78°15'	1,252	1880-1901	44.15
Erie	42°07'	80°05'	713	1875-1901	39.27
Gettysburg	39°40'	77°15'	624	1830-1895	39.57
Harrisburg	40°16'	76°55'	374	1877-1901	41.02
Lewistown	40°58'	76°55'	450	1856-1901	41.25
Philadelph	39°57'	75°09'	117	1798-1901	41.47
Pittsburg	40°43'	80°02'	842	1836-1901	35.68
Warren	41°57'	79°14'	1,137	1885-1901	43.18

The Larger Cities and Their Population for Seven Decades.

CITIES	1910	1900	1890	1880	1870	1860	1850
Philadelphia	1,549,008	1,203,067	1,040,064	847,170	674,022	505,510	121,276
Pittsburg	533,005	451,512	343,004	150,386	86,070	40,217	40,001
Scranton	129,867	102,020	75,215	45,852	35,002	9,223	.....
Reading	99,071	78,961	58,661	43,278	33,030	23,102	15,743
Wilkes-Barre	67,195	51,721	37,718	23,339	19,174	4,220	2,723
Erie	66,235	52,733	40,934	27,737	19,640	9,410	5,858
Harrisburg	64,180	50,167	39,385	30,702	23,104	13,405	7,834
Johnstown	55,452	35,036	21,805	8,380	6,028	4,185	1,269
Altoona	52,127	38,073	30,337	19,710	10,610	3,591	.....
Allentown	51,913	35,416	25,228	18,093	13,884	8,025	3,770
Lancaster	47,227	41,459	32,011	25,700	20,235	17,003	12,309
York	44,750	33,708	20,793	13,040	11,003	8,005	5,863
McKeesport	42,094	34,227	20,741	8,212	2,523	2,166	1,302
Chester	38,537	33,088	20,226	14,097	9,485	4,031	1,667
Newcastle	36,280	28,339	11,600	8,418	6,104	1,872	1,611
Williamsport	31,800	28,757	27,132	18,934	16,030	5,064	1,615
Easton	28,523	25,238	14,481	11,024	10,087	8,944	7,250
Norristown	27,775	22,295	19,791	13,003	10,755	8,848	6,024
Shenandoah	25,774	20,321	15,044	10,147	2,951	.....	.....
Hazleton	25,452	14,230	11,872	6,035	4,317	1,707	.....
Butler	20,728	10,853	8,734	3,193	1,935	1,309	1,148
Pottsville	20,240	15,710	14,117	13,253	12,384	9,444	7,515
S. Bethlehem	19,073	13,241	10,302	4,025	3,559	.....	.....
Shamokin	19,588	18,202	14,493	8,184	4,370	.....	.....
Bradock	19,357	15,954	8,501	3,310	1,290	.....	.....
Lebanon	19,240	17,028	14,664	8,778	6,727	4,469	2,184
Wilkinsburg	18,924	11,889	4,662	.....	.....	.....	.....
Washington	18,778	7,670	7,063	4,292	3,571	3,587	2,602
Nanticoke	18,877	12,116	10,044	3,884	.....	.....	.....
Homestead	18,718	12,554	7,911	.....	.....	.....	.....
Dunmore	17,615	12,583	8,315	5,351	4,311	.....	.....
Mt. Carmel	17,532	13,179	8,254	2,378	1,280	.....	.....
Carbondale	17,049	13,536	10,833	7,714	6,393	.....	4,955
Plymouth	16,099	13,649	9,344	6,005	2,684	.....	.....
Pittston	16,027	12,556	10,302	7,472	6,790	3,082	.....
Mahanoy City	15,936	13,504	11,280	7,181	5,533	.....	.....
Duquesne	15,727	9,036	.....	.....	.....	1,720	870
Oil City	15,057	13,204	10,632	7,315	2,270	.....	.....
Pottstown	15,509	13,606	13,285	5,305	4,125	2,380	1,664
Sharon	15,279	8,916	7,450	5,084	4,221	900	541
McKees Rocks	14,702	6,352	1,687	.....	.....	.....	.....
Bradford	14,544	15,020	10,514	6,167	1,446	1,515	976
Steelton	14,249	12,080	6,250	2,477	.....	.....	.....
Sunbury	13,779	9,140	5,930	4,077	3,131	1,803	1,218
Uniontown	13,344	7,344	4,356	3,295	2,503	2,333	.....
Greensburg	13,012	6,508	4,202	2,500	1,642	1,388	1,051
Connellsville	12,845	7,100	5,626	3,090	1,292	909	.....
Bethlehem	12,837	7,293	6,702	5,193	4,512	2,860	1,519
Meadville	12,780	10,291	6,520	8,896	7,193	3,002	2,578
Dubois	12,023	9,375	6,149	2,718	.....	.....	.....
Beaver Falls	12,101	10,054	6,735	5,104	3,112	.....	.....
N. Braddock	11,824	6,535	.....	.....	.....	.....	.....
Chambersburg	11,800	8,864	7,893	6,877	6,308	5,255	3,335
Monessen	11,775	2,197	.....	.....	.....	.....	.....
West Chester	11,767	9,524	8,028	7,046	5,030	4,757	3,172
Columbia	11,434	12,316	10,509	8,312	6,461	4,998	4,140
Old Forge	11,242	5,630	.....	.....	.....	.....	.....
Coatesville	11,084	5,721	3,680	2,766	2,025	.....	.....
Warren	11,080	8,043	4,332	2,810	2,014	1,738	1,013
Phoenixville	10,743	6,196	8,514	6,682	5,292	4,880	2,670
Carlisle	10,393	6,026	7,020	6,060	6,050	5,064	4,581
South Sharon	10,190	.....	.....	.....	.....	.....	.....
Carnegie	10,009	7,330	.....	.....	.....	.....	.....
Franklin	9,767	7,317	6,221	5,012	3,005	1,303	936
Charlton	9,615	5,930	.....	.....	.....	.....	.....
Tamaqua	9,462	7,297	6,054	5,730	5,060	4,017	3,080
Dickson City	9,331	4,048	3,110	838	301	.....	.....
Bristol	9,256	7,104	6,553	5,273	3,269	2,187	1,810
Larksville	9,288	.....	.....	.....	.....	.....	.....
Taylor	9,060	4,415	.....	.....	.....	.....	.....
Greater Punks- sawney	9,058	6,746	4,194	.....	.....	.....	.....
Latrobe	8,777	4,914	3,589	1,815	1,127	758	.....
Northampton	8,720	.....	.....	.....	.....	.....	.....
Titusville	8,533	8,244	8,073	6,049	8,039	438	243
Olyphant	8,505	6,180	4,083	2,694	2,327	.....	.....
Edwardsville	8,437	5,195	3,284	.....	.....	.....	.....
New Brighton	8,320	6,820	5,610	3,633	4,037	2,034	1,443
Lansford	8,321	4,888	4,004	2,206	.....	.....	.....
Donora	8,174	.....	.....	.....	.....	.....	.....
Lewistown	8,166	4,451	3,273	3,222	2,737	2,638	2,733
Sharpsburg	8,153	6,842	4,898	3,169	2,176	1,430	1,220
Jeannette	8,077	5,895	3,296	.....	.....	.....	.....
Winfield	8,043	.....	.....	.....	.....	.....	.....
Millvale	7,861	6,730	3,800	1,824	668	.....	.....
Lock Haven	7,772	7,212	7,358	5,845	6,986	3,349	835
New Kensington	7,707	4,665	.....	.....	.....	.....	.....
Monongahela	7,508	5,173	4,096	2,904	1,978	909	977
Danville	7,517	8,042	7,008	8,246	8,430	6,385	3,302
Durva	7,487	5,541	2,994	.....	.....	.....	.....
Conshohocken	7,480	5,762	5,470	4,501	3,071	1,741	727
Milton	7,400	6,175	5,317	2,102	1,929	1,702	1,040
Tarantum	7,474	5,472	4,027	1,245	944	711	509
Bloomsburg	7,413	6,170	4,635	3,702	3,341	.....	.....



917.48